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海氣象觀測資料年報
(馬祖海域風浪潮流觀測資料)

交通部運輸研究所

中華民國 110 年 2 月

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<tr><td colspan="4">摘要：
本港灣環境資訊網觀測海氣象資料年報，包括馬祖海域2019年觀測風力、波浪、潮汐及海流等資料之觀測記錄表及逐時資料歷線圖。</td></tr>
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ABSTRACT:

This Annual report 2019 of Harbor Environment Information Website(HEIV) covers the observation data of winds, waves, tides and currents near Ma-Tsu offshoe region in Taiwan. The contents in this Annual report include the records of observation and the time series of data.

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目　錄

中文摘要..... Ⅰ
英文摘要..... Ⅱ
目錄 ..... Ⅲ
誌謝 ..... Ⅴ
第 O 章 馬祖海域觀測風浪潮流資料蒐集 0-1
第一章 2019 年馬祖海域觀測風力資料年報 1-1
1.1 2019 年馬祖海域觀測風力資料年報圖表 1-1
1.2 2019 年馬祖海域各測站修補前風力統計量統計表 1-2
1.3 2019 年馬祖海域主要測站 1 與其他測站風力歷線比較圖 ... 1-3
1.4 2019 年馬祖海域主要測站 2 與其他測站風力歷線比較圖 ... 1-4
1.5 2019 年馬祖海域各測站修補前風力向量分佈圖 1-5
1.6 2019 年馬祖海域各測站修補前風力向量行進圖 1-6
第二章 2019 年馬祖海域觀測波浪資料年報 2-1
2.1 2019 年馬祖海域觀測波浪資料年報圖表 2-1
2.2 2019 年馬祖海域各測站修補前波浪統計量統計表 2-2
2.3 2019 年馬祖海域主要測站 1 與其他測站波浪歷線比較圖 ... 2-3
2.4 2019 年馬祖海域主要測站 2 與其他測站波浪歷線比較圖 ... 2-4
2.5 2019 年馬祖海域各測站修補前波浪向量分佈圖 2-5
第三章 2019 年馬祖海域觀測潮汐資料年報 3-1
3.1 2019 年馬祖海域觀測潮汐資料年報圖表 3-1
3.2 2019 年馬祖海域各測站修補前潮汐統計量統計表 3-2
3.3 2019 年馬祖海域主要測站 1 與其他測站潮汐歷線比較圖 ... 3-3
3.4 2019 年馬祖海域主要測站 2 與其他測站潮汐歷線比較圖 ... 3-4
3.5 2019 年馬祖海域主要測站 3 與其他測站潮汐歷線比較圖 ... 3-5
第四章 2019 年馬祖海域觀測海流資料年報 4-1
4.1 2019 年馬祖海域觀測海流資料年報圖表 4-1

4.2　2019 年馬祖海域各測站海流統計量統計表 4-2
4.3　2019 年馬祖海域各測站海流歷線比較圖 4-3
4.4　2019 年馬祖海域各測站海流向量分佈圖 4-4
4.5　2019 年馬祖海域各測站海流向量行進圖 4-5

誌　　謝

2019 年港灣環境資訊網觀測風力資料，蒐集之馬祖海域風力資料，除本中心自行觀測之外，在馬祖氣象站(**測站 E**) 、馬祖海上浮標(**測站 Y**)等觀測風力資料，係交通部 **中央氣象局(CWB)**提供，謹致謝忱。

2019 年港灣環境資訊網觀測波浪資料，蒐集之馬祖海域波浪資料，除本中心自行觀測之外，在馬祖海上浮標(**測站 Y**)觀測波浪資料，係交通部 **中央氣象局(CWB)**提供，謹致謝忱。

2019 年港灣海氣象觀測潮汐資料，蒐集之馬祖海域潮汐觀測資料，除本中心自行觀測之外，在馬祖(**測站 F**)觀測潮汐資料，係交通部 **中央氣象局** 提供，謹致謝忱。

2019 年港灣環境資訊網觀測海流資料，蒐集之馬祖海域海流資料，除本中心自行觀測之外，在馬祖海上浮標(**測站 Y**)觀測海流資料，係交通部 **中央氣象局(CWB)**提供，謹致謝忱。

第 O 章 馬祖海域觀測風浪潮流資料蒐集

本年報將彙整包括本所港研中心(IHMT)、氣象局(CWB)、水利署(WRA)、成功大學水文中心(COMC)、國立臺灣海洋大學(NTOC)、海科中心(TORI)、觀光局東北角管理處(TBRC)、台灣中油(CPC)等單位，於臺灣北苗海域、北端海域、宜蘭海域、花蓮海域、臺東海域、屏東海域、高雄海域、嘉南海域、中雲海域、澎湖海域、金門海域及馬祖海域等 12 個海域，海域區分如附圖 A1。

馬祖海域觀測風力資料測站統計表如表 WU1，觀測波浪資料測站統計表如表 VU1，觀測潮汐資料測站統計表如表 TU1，觀測海流資料測站統計表如表 CU1。

表 WU1　馬祖海域觀測風力資料測站統計表

海域名稱	測站總數	IHMT 測站	CWB 測站	WRA 測站	其他測站	備註
馬祖海域	7	5	2			

表 VU1　馬祖海域觀測波浪資料測站統計表

海域名稱	測站總數	IHMT 測站	CWB 測站	WRA 測站	其他測站	備註
馬祖海域	7	6	1	0	0	

表 TU1　馬祖海域觀測潮汐資料測站統計表

海域名稱	測站總數	IHMT 測站	CWB 測站	WRA 測站	其他測站	備註
馬祖海域	12	11	1	0	0	

表 CU1　馬祖海域觀測海流資料測站統計表

海域名稱	測站總數	IHMT 測站	CWB 測站	WRA 測站	其他測站	備註
馬祖海域	7	6	1	0	0	

註:資料更新時間為 2019 年。

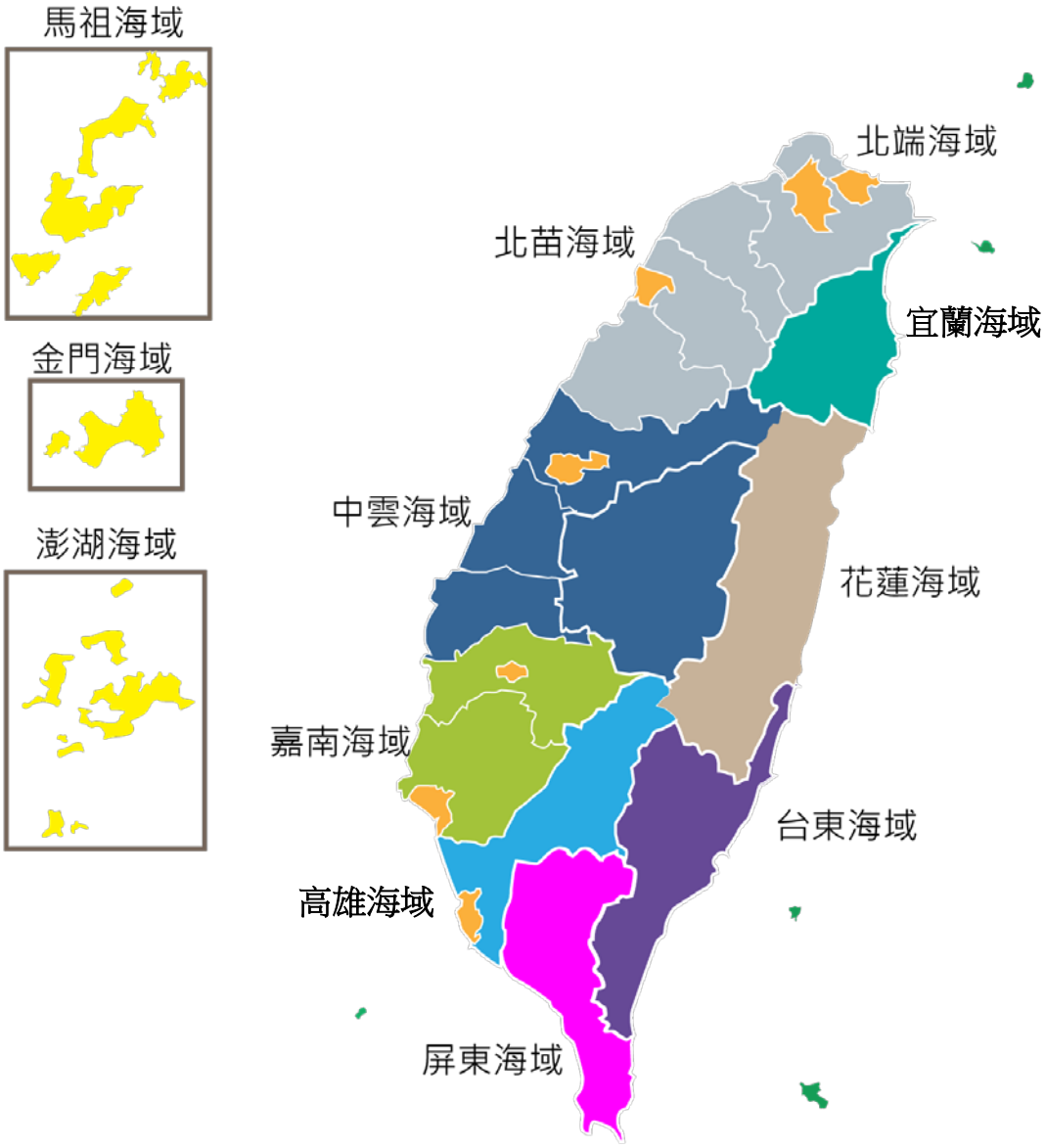


圖 A1 臺灣 12 海域區分示意圖

2019 年馬祖海域觀測風力資料

馬祖海域風之觀測係 2012 年 10 月本中心**(IHMT)**安裝 Young Brand 風速計於馬祖**福澳**港辦事處頂樓 (稱**測站 W**) ，其位置如附圖 WU1。2015 年 9 月本中心於北竿、西莒、東引及東莒等 4 處增設風速站(稱**測站 B**、**測站 C**、**測站 D** 及**測站 I**) 。

測站 E 之風速儀屬中央氣象局**(CWB)**所有，**測站 Y(**海域資料浮標)之風速儀也屬屬中央氣象局所有。馬祖海域各測站歷年觀測風資料蒐集概況如表 WU1。

本中心測站風資料之蒐集係採取每小時測定十分鐘之風速、風向數據加以平均，而得出該小時之平均風速、平均風向、最大陣風風速、最大陣風風向、最大陣風之發生時間。本中心之風力資料以取平均風速及平均風向為主。其他測站觀測風速、風向資料也是平均風速(m/s)及風向(度)。

表 WU1 馬祖海域觀測風力資料蒐集概況表(統計時間至 2019 年 11 月)

測站	緯度	經度	觀測期間	觀測單位	備註
W	26°9'36"N	119°56'37"E	2012/10-2019/11(觀測中)	港研中心	福澳港
E	26°10'10"N	119°55'23"E	2004/01-2019/11(觀測中)	中央氣象局	福澳港區
Y	26°22'36"N	120°31'53"E	2010/07-2019/11(觀測中)	中央氣象局	馬祖資料浮標
B	26°12'25"N	119°58'3.5"E	2015/09-2019/11(觀測中)	港研中心	北竿港
C	25°58'11"N	119°55'55"E	2015/09-2019/11(觀測中)	港研中心	西莒港
D	26°9'36"N	119°56'37"E	2015/09-2019/11(觀測中)	港研中心	東引港
I	26°21'49”N	120°29'2.5”E	2015/09-2019/11(觀測中)	港研中心	東莒港

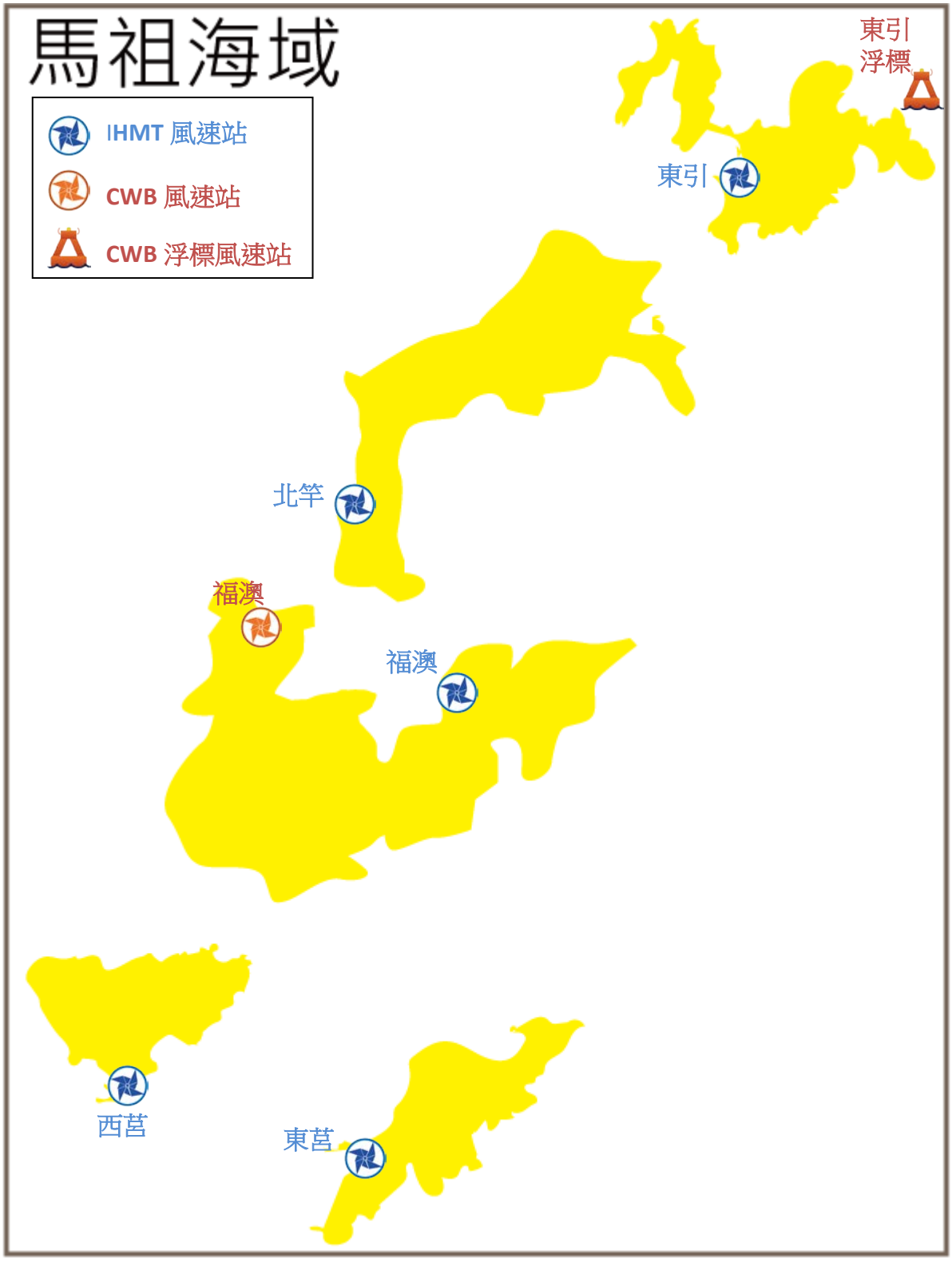


圖 WU1 馬祖海域風力觀測站位置示意圖

2019 年馬祖海域觀測潮汐資料

馬祖海域潮位之觀測 2013 年 10 月本中心安裝潮位計於馬祖福澳港區(稱**測站 T**) ，其位置如附圖 TU1。2014 年 10 月本中心安裝 AWAC 系統於福澳港附近海域(稱**測站 X**)。2015 年 9 月於北竿、西莒、東引及東莒等港區安裝潮位計(稱**測站 S**、**測站 G**、**測站 L** 及**測站 M**) ，同時於北竿、西莒、東引及東莒等港區附近海域安裝 AWAC 系統(稱**測站 A**、**測站 1**、**測站 2** 及**測站 3**)。2019 年 8 月本中心於南竿增設潮波流儀 AWAC(稱**測站 4**)。**測站 F** 之潮位儀屬中央氣象局所有。馬祖海域各測站歷年觀測潮汐資料蒐集概況如表 TU1。

潮位**測站 X** 等潮波流儀，每一小時取前 10 分鐘之水位變化，然後加以平均得出該小時之平均水位值。**測站 T** 等潮位資料取樣方式為每 6 分鐘量測一次水位變化。**測站 F** 資料由中央氣象局提供。

表 TU1 馬祖海域觀測潮汐資料蒐集概況表(統計時間至 2019 年 11 月)

測站	緯度	經度	觀測期間	觀測單位	備註
T	26°09'36"N	119°56'37"E	2013/10-2019/11(觀測中)	港研中心	福澳港區潮位站
S	26°12'15"N	119°58'1"E	2015/09-2019/11(觀測中)	港研中心	北竿港區潮位站
G	25°58'9"N	119°55'57"E	2015/09-2019/11(觀測中)	港研中心	西莒港區潮位站
L	26°21'50"N	120°29'2"E	2015/09-2019/11(觀測中)	港研中心	東引港區潮位站
M	25°57'31"N	119°57'49"E	2015/09-2019/11(觀測中)	港研中心	東莒港區潮位站
F	26° 9'42"N	119°56'36E	2004/01-2013/12	中央氣象局	馬祖潮位站
X	26°09'87"N	119°56'11"E	2014/10-2019/11(觀測中)	港研中心	福澳港區外海
A	26°12'18"N	119°58'1 "E	2015/09-2019/11(觀測中)	港研中心	北竿港區外海
1	25°58'8 "N	119°55'54 "E	2015/09-2016/10	港研中心	西莒港區外海
2	26°21'55 "N	120°29'2 "E	2015/09-2019/11(觀測中)	港研中心	東引港區外海
3	25°57'31 "N	119°57'47 "E	2015/09-2019/11(觀測中)	港研中心	東莒港區外海
4	26°10'07"N	119°56'20"E	2019/08-2019/11(觀測中)	港研中心	南竿港區 AWAC

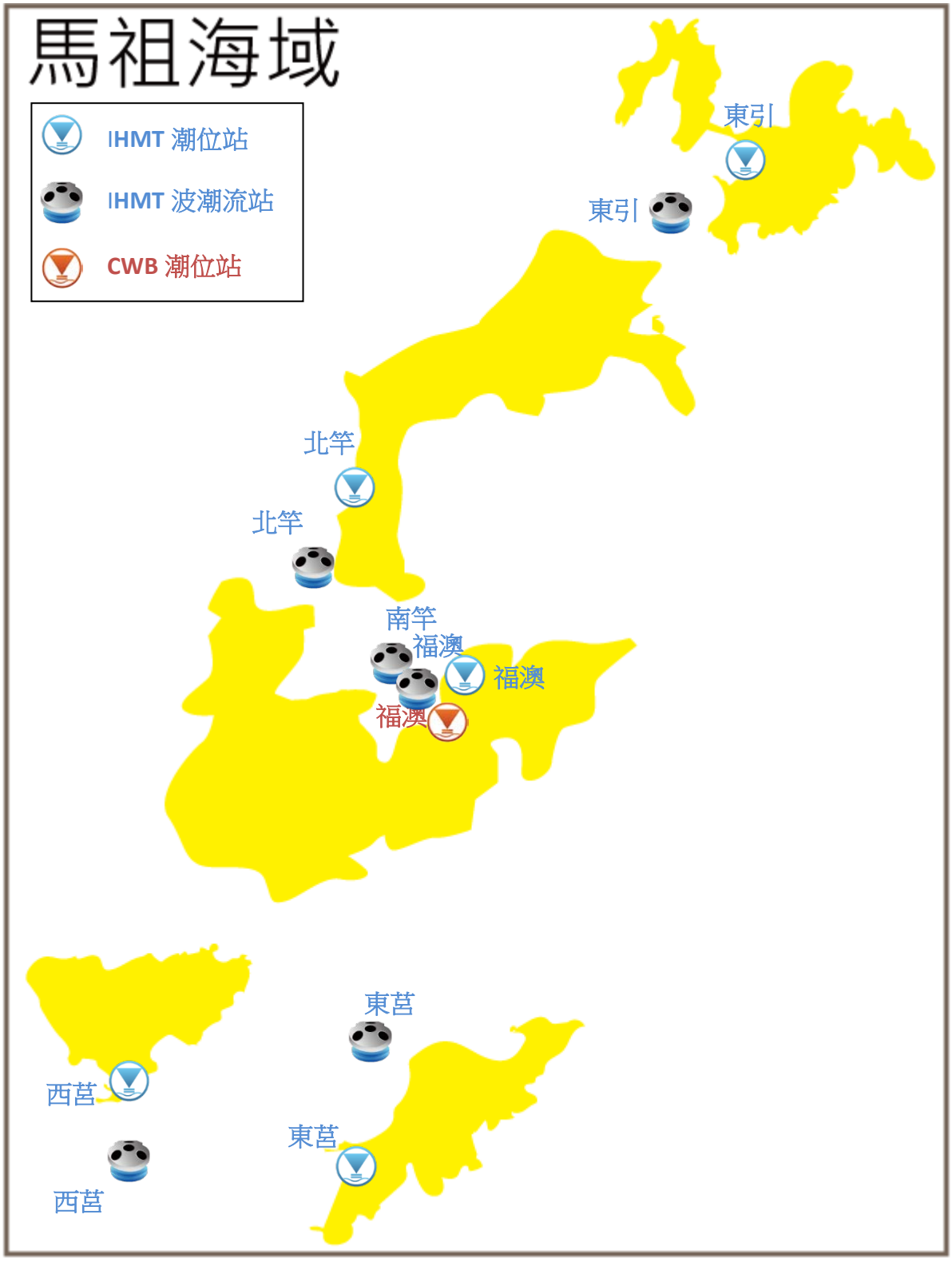


圖 TU1 馬祖海域潮汐觀測站位置示意圖

2019 年馬祖海域觀測潮汐資料

馬祖海域潮位之觀測 2013 年 10 月本中心安裝潮位計於馬祖福澳港區(稱**測站 T**) ，其位置如附圖 TU1。2014 年 10 月本中心安裝 AWAC 系統於福澳港附近海域(稱**測站 X**)。2015 年 9 月於北竿、西莒、東引及東莒等港區安裝潮位計(稱**測站 S**、**測站 G**、**測站 L** 及**測站 M**) ，同時於北竿、西莒、東引及東莒等港區附近海域安裝 AWAC 系統(稱**測站 A**、**測站 1**、**測站 2** 及**測站 3**)。2019 年 8 月本中心於南竿增設潮波流儀 AWAC(稱**測站 4**)。**測站 F** 之潮位儀屬中央氣象局所有。馬祖海域各測站歷年觀測潮汐資料蒐集概況如表 TU1。

潮位**測站 X** 等潮波流儀，每一小時取前 10 分鐘之水位變化，然後加以平均得出該小時之平均水位值。**測站 T** 等潮位資料取樣方式為每 6 分鐘量測一次水位變化。**測站 F** 資料由中央氣象局提供。

表 TU1 馬祖海域觀測潮汐資料蒐集概況表(統計時間至 2019 年 11 月)

測站	緯度	經度	觀測期間	觀測單位	備註
T	26°09'36"N	119°56'37"E	2013/10-2019/11(觀測中)	港研中心	福澳港區潮位站
S	26°12'15"N	119°58'1"E	2015/09-2019/11(觀測中)	港研中心	北竿港區潮位站
G	25°58'9"N	119°55'57"E	2015/09-2019/11(觀測中)	港研中心	西莒港區潮位站
L	26°21'50"N	120°29'2"E	2015/09-2019/11(觀測中)	港研中心	東引港區潮位站
M	25°57'31"N	119°57'49"E	2015/09-2019/11(觀測中)	港研中心	東莒港區潮位站
F	26° 9'42"N	119°56'36E	2004/01-2013/12	中央氣象局	馬祖潮位站
X	26°09'87"N	119°56'11"E	2014/10-2019/11(觀測中)	港研中心	福澳港區外海
A	26°12'18"N	119°58'1 "E	2015/09-2019/11(觀測中)	港研中心	北竿港區外海
1	25°58'8 "N	119°55'54 "E	2015/09-2016/10	港研中心	西莒港區外海
2	26°21'55 "N	120°29'2 "E	2015/09-2019/11(觀測中)	港研中心	東引港區外海
3	25°57'31 "N	119°57'47 "E	2015/09-2019/11(觀測中)	港研中心	東莒港區外海
4			2019/08-2019/11(觀測中)	港研中心	南竿港區 AWCP

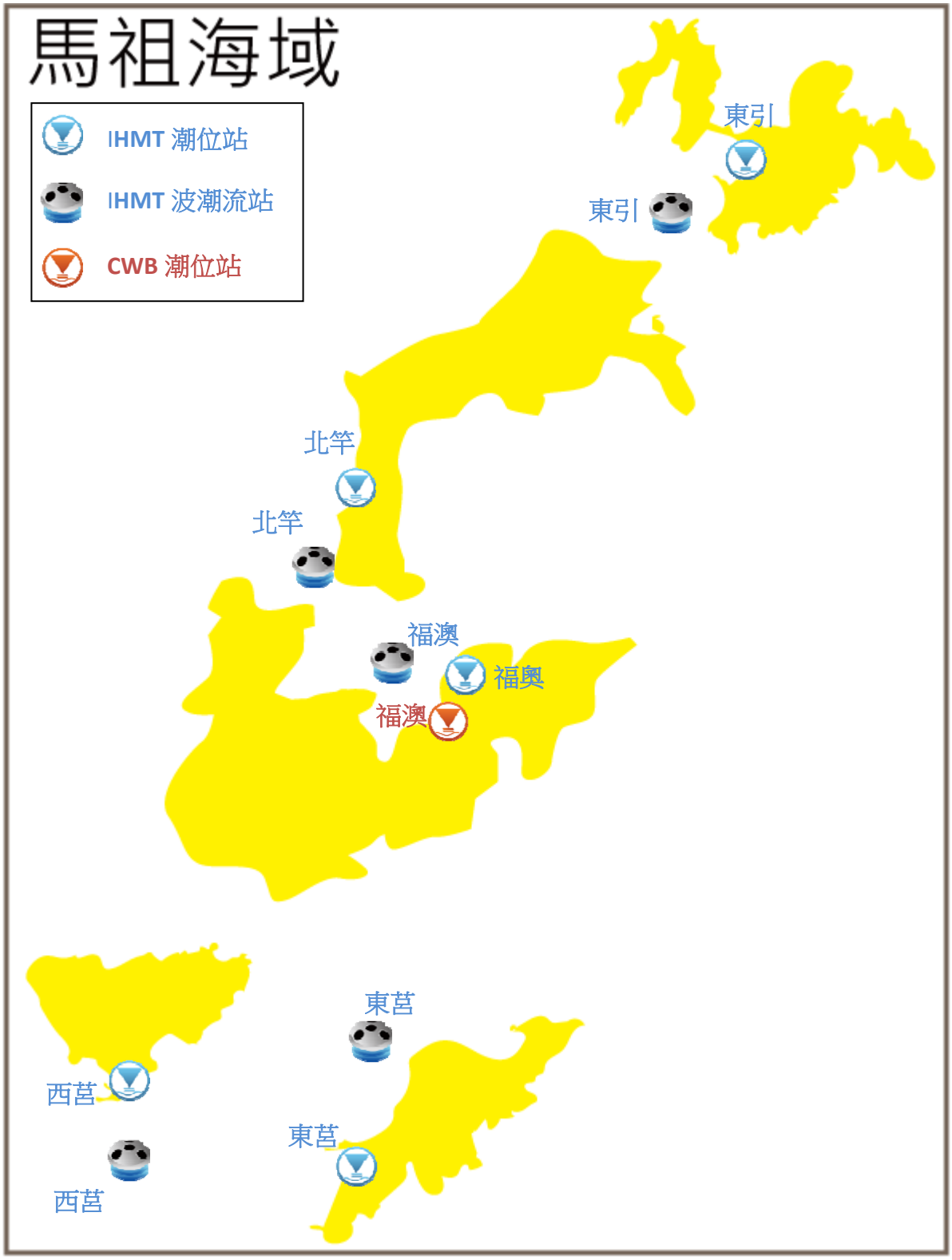


圖 TU1 馬祖海域潮汐觀測站位置示意圖

2019 年馬祖海域觀測海流資料

馬祖海域海流之觀測係 2014 年 10 月本中心**(IHMT)**安裝挪威 NORTEK 公司表面波浪監測系統於馬祖港福澳港區(稱**測站 X**) ，其位置如附圖 CU1。2015 年 9 月本中心於北竿、西莒、東引及東莒等 4 處增設潮波流儀 AWAC(稱**測站 A**、**測站 1**、**測站 2** 及**測站 3**)。2019 年 8 月本中心於南竿增設潮波流儀 AWAC(稱**測站 4**)。

測站 Y 之海流儀也屬屬中央氣象局**(CWB)**所有，馬祖海域各測站歷年觀測海流資料蒐集概況如表 CU1。

剖面海流流速的量測可以依照使用在不同水深即自固定在海床上之儀器位置到水表面來設定量測不同的間距，馬祖觀測站水深間距設定為 1 公尺；每小時連續量測 600 秒，再將總和平均代表其數樣每一間距層之海流流速、流向等資料，記錄在感應器內，並每隔 1 小時經由海底電纜傳訊回接收站之電腦中儲存。

表 CU1 馬祖海域觀測海流資料蒐集概況表(統計時間至 2019 年 11 月)

測站	緯度	經度	觀測期間	觀測單位	備註
X	26°09'87"N	119°56'11"E	2014/10-2019/11(觀測中)	港研中心	馬祖福澳港 AWAC
A	26°12'18"N	119°58'1 "E	2015/09-2019/11(觀測中)	港研中心	北竿港區 AWAC
1	25°58'8 "N	119°55'54 "E	2015/09-2016/10	港研中心	西莒 AWAC
2	26°21'55 "N	120°29'2 "E	2015/09-2019/11(觀測中)	港研中心	東引 AWAC
3	25°57'31 "N	119°57'47 "E	2015/09-2019/11(觀測中)	港研中心	東莒 AWAC
Y	26°22'36"N	120°31'53"E	2019/09-2019/11(觀測中)	中央氣象局	馬祖資料浮標
4	26°10'07"N	119°56'20"E	2019/08-2019/11(觀測中)	港研中心	南竿港區 AWAC

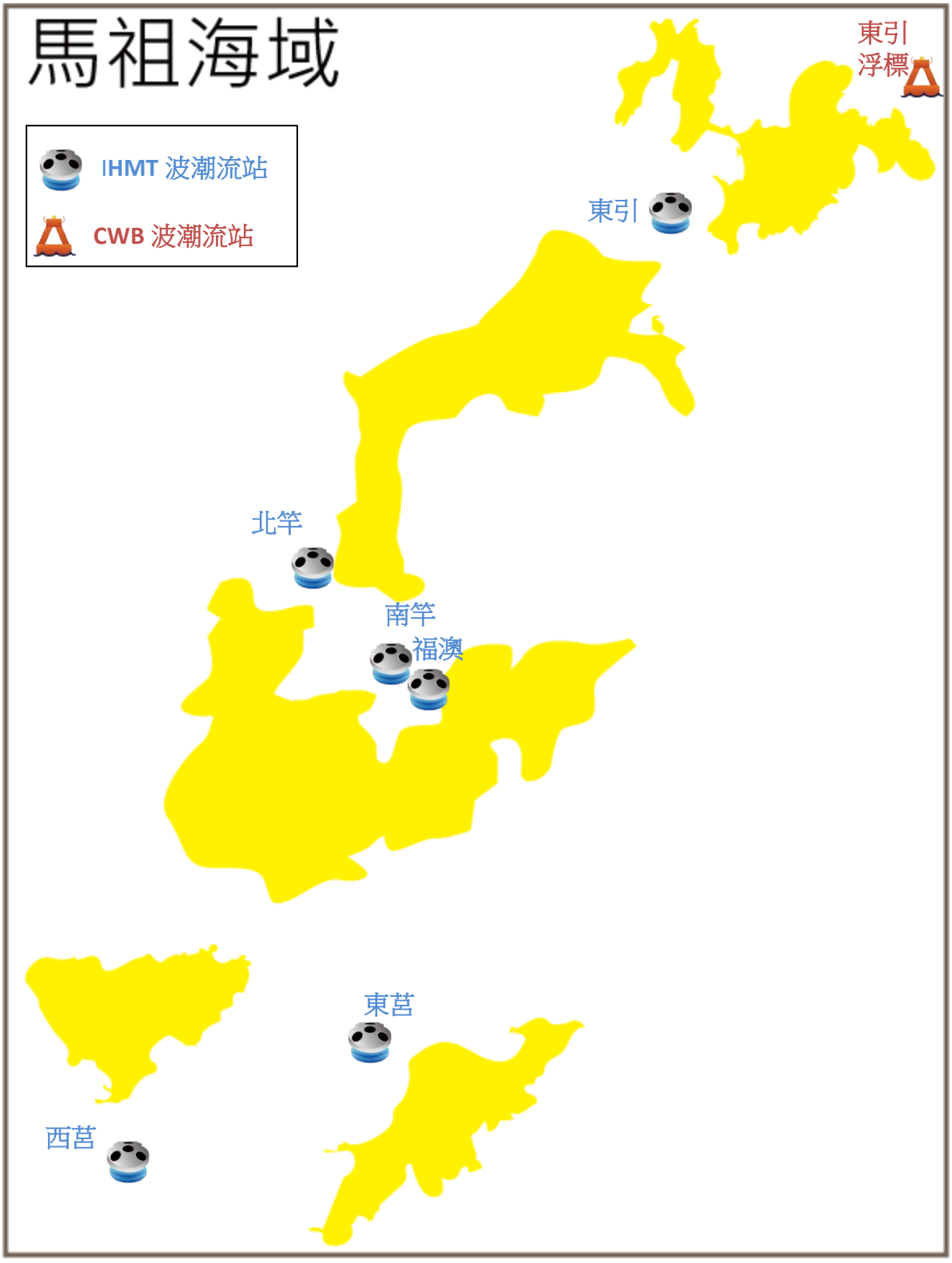


圖 CU1 馬祖海域海流觀測站位置示意圖

第一章　2019 年馬祖海域觀測風力資料

馬祖海域風之觀測包括**測站 W**、**測站 Y**、**測站 B**、**測站 E**、**測站 C**、**測站 D** 及**測站 I** 等 7 個測站(測站位置如第 O 章圖 WU1，各測站歷年觀測風資料蒐集概況如表 WU1)。本年報取經檢核及補遺之 **Y 站**資料作為主要測站 1，**W 站**資料作為主要測站 2。

1.1　2019 年馬祖海域觀測風力資料年報圖表

本章第 1 節**風力**年報**資料處理之圖表包括:**

1. 表 1.1.1a　2019 年**各觀測站**每月**觀測風力**資料**修補前**記錄表。
2. 表 1.1.1b 2019 年**主要測站**每月**觀測風力**資料**修補後**記錄表。
3. 表 1.1.2　2019 年**主要測站 1 修補後**每月(季)及整年風速及風向重要統計量統計表。
4. 表 1.1.3　2019 年**主要測站 2 修補後**每月(季)及整年風速及風向重要統計量統計表。
5. 圖 1.1.1a　2019 年**主要測站 1 修補前後**每月風速歷線比較圖。
6. 圖 1.1.1b　2019 年**主要測站 1 修補前後**每月風向歷線比較圖。
7. 圖 1.1.2a　2019 年**主要測站 2 修補前後**每月風速歷線比較圖。
8. 圖 1.1.2b　2019 年**主要測站 2 修補前後**每月風向歷線比較圖。
9. 圖 1.1.3　2019 年**主要測站 1 修補後**每月風力向量分佈圖。
10. 圖 1.1.4　2019 年**主要測站 2 修補後**每月風力向量分佈圖。
11. 圖 1.1.5　2019 年**主要測站 1 修補後**每月風力向量行進圖。
12. 圖 1.1.6　2019 年**主要測站 2 修補後**每月風力向量行進圖。

第 2 節風力年報資料處理之統計表包括: 2019 年馬祖海域**各測站修補前**每月(季)及整年風速及風向重要統計量統計表。

第 3 節風力年報資料處理之統計圖包括: 2019 年馬祖海域**主要測站 1 修補後**與**其他測站(修補前)**每月風速及風向歷線比較圖。

第 4 節風力年報資料處理之統計圖包括: 2019 年馬祖海域**主要測站 2 修補後**與**其他測站(修補前)**每月風速及風向歷線比較圖。

第 5 節風力年報資料處理之統計圖包括: 2019 年馬祖海域**各測站修補前**每月風力向量分佈圖。

第 6 節風力年報資料處理之統計圖包括: 2019 年馬祖海域**各測站修補前**每月風力向量行進圖。

表1.1.1a 2019年每月馬祖海域修補前各測站觀測風力資料紀錄表

海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域
年月/測站	Y	W	E	B	C	D	I					
2018/12月	578(77.7%)	286(38.4%)	744(100%)	*	743(99.9%)	743(99.9%)	743(99.9%)	*	*	*	*	*
2019/ 1月	367(49.3%)	335(45.0%)	744(100%)	*	744(100%)	742(99.7%)	744(100%)	*	*	*	*	*
2019/ 2月	636(94.6%)	258(38.4%)	672(100%)	133(19.8%)	671(99.9%)	671(99.9%)	670(99.7%)	*	*	*	*	*
2019/ 3月	683(91.8%)	421(56.6%)	744(100%)	82(11.0%)	743(99.9%)	742(99.7%)	743(99.9%)	*	*	*	*	*
2019/ 4月	701(97.4%)	552(76.7%)	720(100%)	*	719(99.9%)	610(84.7%)	720(100%)	*	*	*	*	*
2019/ 5月	727(97.7%)	633(85.1%)	744(100%)	216(29.0%)	734(98.7%)	733(98.5%)	733(98.5%)	*	*	*	*	*
2019/ 6月	655(91.0%)	545(75.7%)	720(100%)	718(99.7%)	719(99.9%)	718(99.7%)	720(100%)	*	*	*	*	*
2019/ 7月	642(86.3%)	744(100%)	744(100%)	743(99.9%)	741(99.6%)	743(99.9%)	741(99.6%)	*	*	*	*	*
2019/ 8月	705(94.8%)	743(99.9%)	744(100%)	741(99.6%)	742(99.7%)	744(100%)	744(100%)	*	*	*	*	*
2019/ 9月	567(78.8%)	720(100%)	720(100%)	715(99.3%)	594(82.5%)	719(99.9%)	717(99.6%)	*	*	*	*	*
2019/10月	702(94.4%)	38(5.1%)	744(100%)	744(100%)	744(100%)	741(99.6%)	741(99.6%)	*	*	*	*	*
2019/11月	720(100%)	*	720(100%)	323(44.9%)	720(100%)	*	205(28.5%)	*	*	*	*	*
2019/冬季	1581(73.2%)	879(40.7%)	2160(100%)	133(6.2%)	2158(99.9%)	2156(99.8%)	2157(99.9%)	*	*	*	*	*
2019/春季	2111(95.6%)	1606(72.7%)	2208(100%)	298(13.5%)	2196(99.5%)	2085(94.4%)	2196(99.5%)	*	*	*	*	*
2019/夏季	2002(90.7%)	2032(92.0%)	2208(100%)	2202(99.7%)	2202(99.7%)	2205(99.9%)	2205(99.9%)	*	*	*	*	*
2019/秋季	1989(91.1%)	758(34.7%)	2184(100%)	1782(81.6%)	2058(94.2%)	1460(66.8%)	1663(76.1%)	*	*	*	*	*
2019/整年	7683(87.7%)	5275(60.2%)	8760(100%)	4415(50.4%)	8614(98.3%)	7906(90.3%)	8221(93.8%)	*	*	*	*	*
起始年月	2018/12	2018/12	2018/12	2019/02	2018/12	2018/12	2018/12	*	*	*	*	*
結束年月	2019/11	2019/10	2019/11	2019/11	2019/11	2019/10	2019/11	*	*	*	*	*

表1.1.1b 2019年每月馬祖海域修補後各測站風力資料紀錄表

海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域
年月/測站	Y	W										
2018/12 月	744(100%)	744(100%)	*	*	*	*	*	*	*	*	*	*
2019/ 1 月	744(100%)	744(100%)	*	*	*	*	*	*	*	*	*	*
2019/ 2 月	672(100%)	672(100%)	*	*	*	*	*	*	*	*	*	*
2019/ 3 月	744(100%)	744(100%)	*	*	*	*	*	*	*	*	*	*
2019/ 4 月	720(100%)	720(100%)	*	*	*	*	*	*	*	*	*	*
2019/ 5 月	744(100%)	744(100%)	*	*	*	*	*	*	*	*	*	*
2019/ 6 月	720(100%)	720(100%)	*	*	*	*	*	*	*	*	*	*
2019/ 7 月	744(100%)	744(100%)	*	*	*	*	*	*	*	*	*	*
2019/ 8 月	744(100%)	744(100%)	*	*	*	*	*	*	*	*	*	*
2019/ 9 月	720(100%)	720(100%)	*	*	*	*	*	*	*	*	*	*
2019/10 月	744(100%)	744(100%)	*	*	*	*	*	*	*	*	*	*
2019/11 月	720(100%)	720(100%)	*	*	*	*	*	*	*	*	*	*
2019/冬季	2160(100%)	2160(100%)	*	*	*	*	*	*	*	*	*	*
2019/春季	2208(100%)	2208(100%)	*	*	*	*	*	*	*	*	*	*
2019/夏季	2208(100%)	2208(100%)	*	*	*	*	*	*	*	*	*	*
2019/秋季	2184(100%)	2184(100%)	*	*	*	*	*	*	*	*	*	*
2019/整年	8760(100%)	8760(100%)	*	*	*	*	*	*	*	*	*	*
起始年月	2018/12	2018/12	*	*	*	*	*	*	*	*	*	*
結束年月	2019/11	2019/11	*	*	*	*	*	*	*	*	*	*

表1.1.2　2019年馬祖海域 Y 站修補後風速及風向重要統計量統計表

序號	日期 (年/月)	觀測點數	風速 平均值 (m/s)	平均風 風速/風向 (m/s)/(來向)	最大風 風速/風向 (m/s)/(來向)	輕風 <3.3 (%)	和風 ~7.9 (%)	強風 ~13.8 (%)	疾風 >13.8 (%)	風向 N~E (%)	風向 E~S (%)	風向 S~W (%)	風向 W~N (%)	主要風向 方向/百分比
1	2018/12	744(100%)	9.9	9.2/NNE	16.6/NNE	4.6	29.2	49.3	16.9	87.0	.7	5.1	7.3	NNE/48.9%
2	2019/01	744(100%)	8.4	8.0/NE	14.4/NE	4.8	37.4	57.0	.8	94.0	.1	2.3	3.6	NE /44.1%
3	2019/02	672(100%)	7.8	7.1/NNE	13.4/ENE	15.0	23.5	61.5	.0	85.7	3.4	5.8	5.1	NNE/47.9%
4	2019/03	744(100%)	6.4	5.2/NNE	13.2/NNE	15.2	52.2	32.7	.0	78.1	1.1	8.6	12.2	NNE/41.8%
5	2019/04	720(100%)	5.1	3.2/NNE	12.6/NE	39.4	33.3	27.2	.0	61.4	5.8	23.1	9.7	NNE/30.6%
6	2019/05	744(100%)	5.2	4.4/NNE	13.7/NE	29.3	52.7	18.0	.0	79.3	5.0	9.5	6.2	NNE/39.8%
7	2019/06	720(100%)	5.3	.4/N	12.3/W	26.3	58.5	15.3	.0	49.3	3.3	40.1	7.2	NNE/24.0%
8	2019/07	744(100%)	6.8	4.1/SSW	12.7/SW	16.1	38.3	45.6	.0	23.7	6.9	66.1	3.4	SW /34.4%
9	2019/08	744(100%)	6.6	1.6/NE	14.9/NNW	9.9	63.3	25.9	.8	55.4	9.3	31.2	4.2	NE /22.6%
10	2019/09	720(100%)	7.5	6.5/NE	15.0/N	5.3	51.5	42.4	.8	84.7	5.4	2.6	7.2	NE /37.5%
11	2019/10	744(100%)	7.8	6.7/NE	16.6/NNW	10.2	34.8	53.6	1.3	85.6	8.5	4.4	1.5	NE /41.4%
12	2019/11	720(100%)	9.9	9.6/NNE	15.3/NE	3.5	21.0	70.0	5.6	96.1	1.5	.0	2.4	NNE/53.9%
13	2019/冬	2160(100%)	8.7	8.1/NNE	16.6/NNE	7.9	30.2	55.7	6.1	89.0	1.3	4.4	5.3	NNE/43.9%
14	2019/春	2208(100%)	5.6	4.3/NNE	13.7/NE	27.9	46.2	26.0	.0	73.1	3.9	13.6	9.4	NNE/37.5%
15	2019/夏	2208(100%)	6.3	.8/SSW	14.9/NNW	17.3	53.3	29.1	.3	42.7	6.5	45.9	4.9	SW /23.6%
16	2019/秋	2184(100%)	8.4	7.6/NE	16.6/NNW	6.4	35.8	55.3	2.6	88.8	5.2	2.4	3.7	NE /36.4%
17	2019/年	8760(100%)	7.2	4.8/NNE	16.6/NNE	14.9	41.4	41.4	2.2	73.3	4.3	16.7	5.8	NNE/33.2%

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表1.1.3　2019年馬祖海域 W 站修補後風速及風向重要統計量統計表

序號	日期 (年/月)	觀測點數	風速 平均值 (m/s)	平均風 風速/風向 (m/s)/(來向)	最大風 風速/風向 (m/s)/(來向)	輕風 <3.3 (%)	和風 ~7.9 (%)	強風 ~13.8 (%)	疾風 >13.8 (%)	風向 N~E (%)	風向 E~S (%)	風向 S~W (%)	風向 W~N (%)	主要風向 方向/百分比
1	2018/12	744(100%)	5.0	4.6/N	10.3/NNW	26.6	70.7	2.7	.0	56.6	4.4	3.6	35.3	N /35.2%
2	2019/01	744(100%)	4.0	3.6/N	8.5/NNW	37.4	62.2	.4	.0	57.1	2.6	2.3	38.0	NNE/36.0%
3	2019/02	672(100%)	4.2	3.7/N	9.3/NNW	28.1	70.4	1.5	.0	56.4	7.1	3.7	32.7	N /35.3%
4	2019/03	744(100%)	3.5	2.4/N	10.2/N	53.2	44.1	2.7	.0	46.0	14.4	3.2	36.4	N /24.7%
5	2019/04	720(100%)	3.3	1.5/NNE	9.1/NNW	51.5	46.8	1.7	.0	29.3	26.8	9.2	34.7	N /20.6%
6	2019/05	744(100%)	2.7	1.9/N	9.2/NNW	71.5	26.5	2.0	.0	23.8	14.0	5.1	57.1	NNW/34.0%
7	2019/06	720(100%)	2.8	.5/ENE	8.1/WSW	60.7	39.2	.1	.0	22.6	34.2	10.7	32.5	NNW/17.5%
8	2019/07	744(100%)	3.4	1.4/SSE	10.1/SSW	48.1	51.6	.3	.0	3.1	53.6	18.0	25.3	SE /28.8%
9	2019/08	744(100%)	3.6	1.3/NNW	11.6/NNW	48.5	47.7	3.8	.0	5.0	26.9	11.4	56.7	NNW/36.4%
10	2019/09	720(100%)	4.2	3.6/NNW	9.6/NNW	32.8	64.7	2.5	.0	7.1	5.8	3.3	83.8	NNW/52.5%
11	2019/10	744(100%)	4.1	3.6/NNE	9.2/WNW	27.0	72.7	.3	.0	86.2	10.8	2.0	1.1	NNE/65.2%
12	2019/11	720(100%)	4.5	4.5/NNE	6.6/N	17.9	82.1	.0	.0	98.2	1.5	.0	.3	NNE/67.9%
13	2019/冬	2160(100%)	4.4	4.0/N	10.3/NNW	30.8	67.7	1.5	.0	56.7	4.6	3.2	35.5	N /31.1%
14	2019/春	2208(100%)	3.2	1.9/N	10.2/N	58.8	39.0	2.1	.0	33.1	18.3	5.8	42.8	NNW/24.3%
15	2019/夏	2208(100%)	3.3	.2/ENE	11.6/NNW	52.4	46.2	1.4	.0	10.1	38.3	13.4	38.2	NNW/22.8%
16	2019/秋	2184(100%)	4.3	3.6/N	9.6/NNW	25.9	73.2	.9	.0	64.1	6.1	1.8	28.1	NNE/45.3%
17	2019/年	8760(100%)	3.8	2.4/N	11.6/NNW	42.1	56.4	1.5	.0	40.8	16.9	6.1	36.2	NNE/23.6%

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Wind Speed in Ma-Tsu Seas of MSY0 at 2019

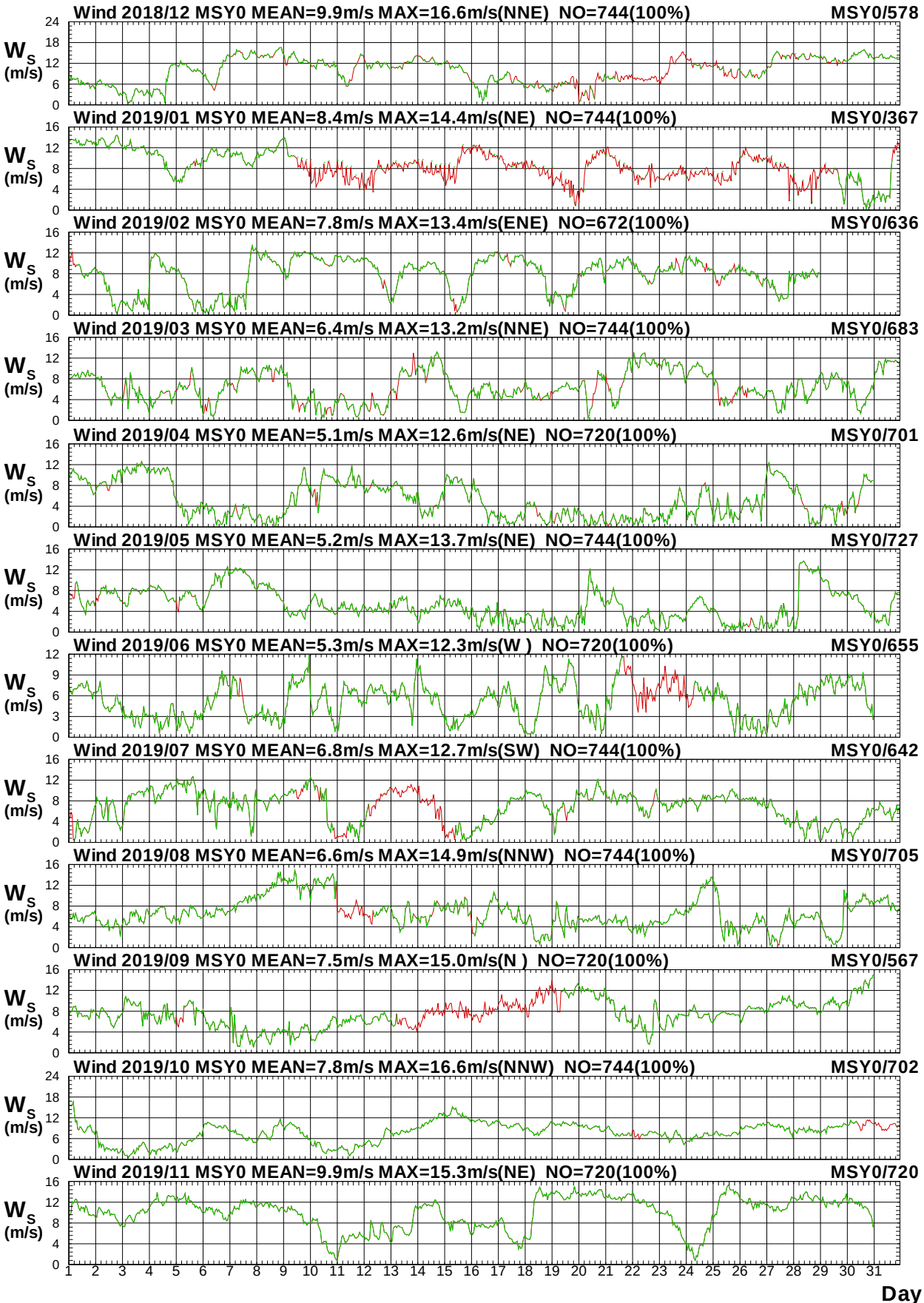


圖1.1.1a　2019年每月馬祖海域 Y 站修補前後之風速比較圖

W18CMSY0.1HA W18CMSY0.1H0 W191MSY0.1HA W191MSY0.1H0 W192MSY0.1HA W192MSY0.1H0
W193MSY0.1HA W193MSY0.1H0 W194MSY0.1HA W194MSY0.1H0 W195MSY0.1HA W195MSY0.1H0

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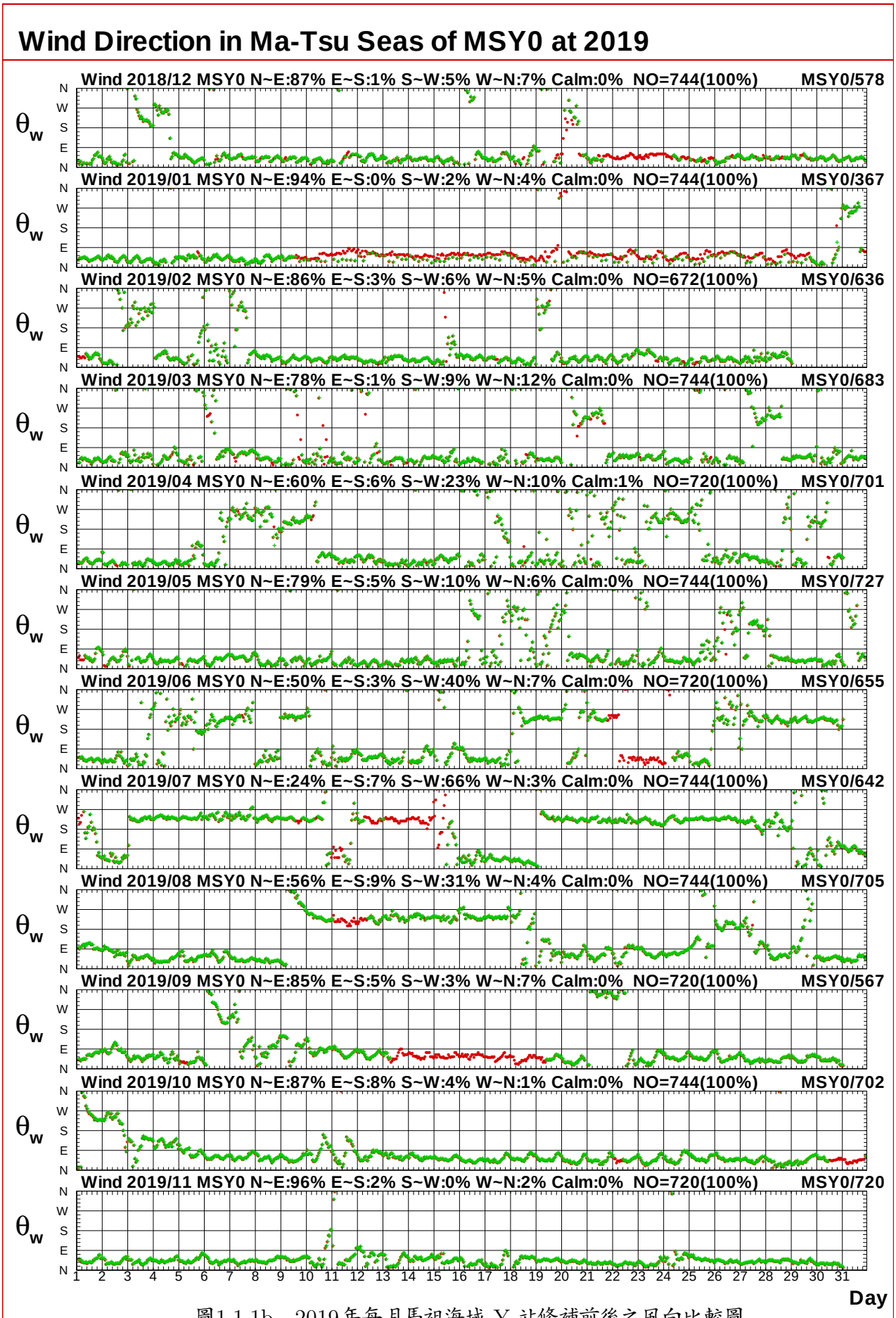


圖1.1.1b　2019年每月馬祖海域 Y 站修補前後之風向比較圖

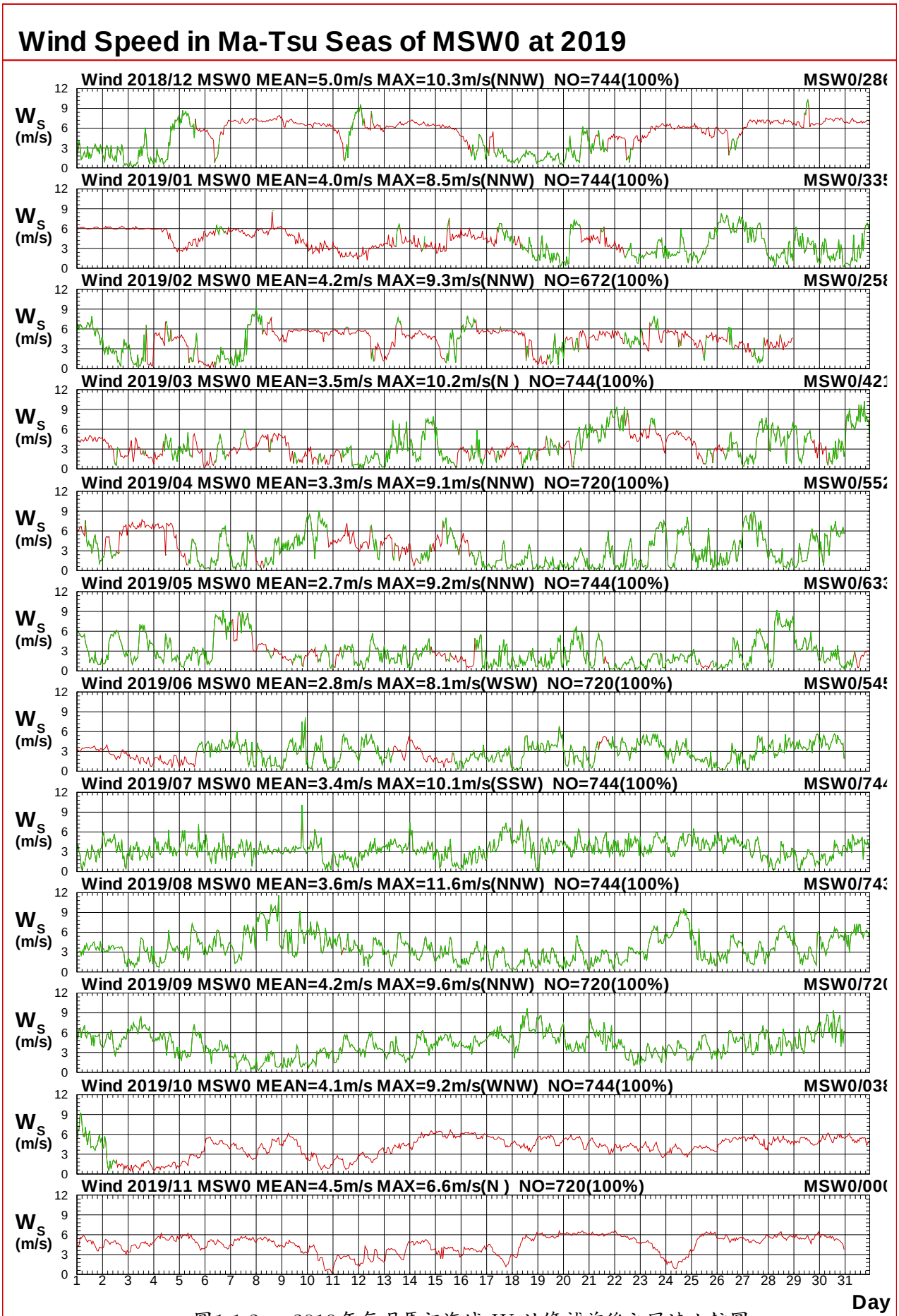


圖1.1.2a　2019年每月馬祖海域 W 站修補前後之風速比較圖

W18CMSW0.1HA W18CMSW0.1H0 W191MSW0.1HA W191MSW0.1H0 W192MSW0.1HA W192MSW0.1H0
W193MSW0.1HA W193MSW0.1H0 W194MSW0.1HA W194MSW0.1H0 W195MSW0.1HA W195MSW0.1H0

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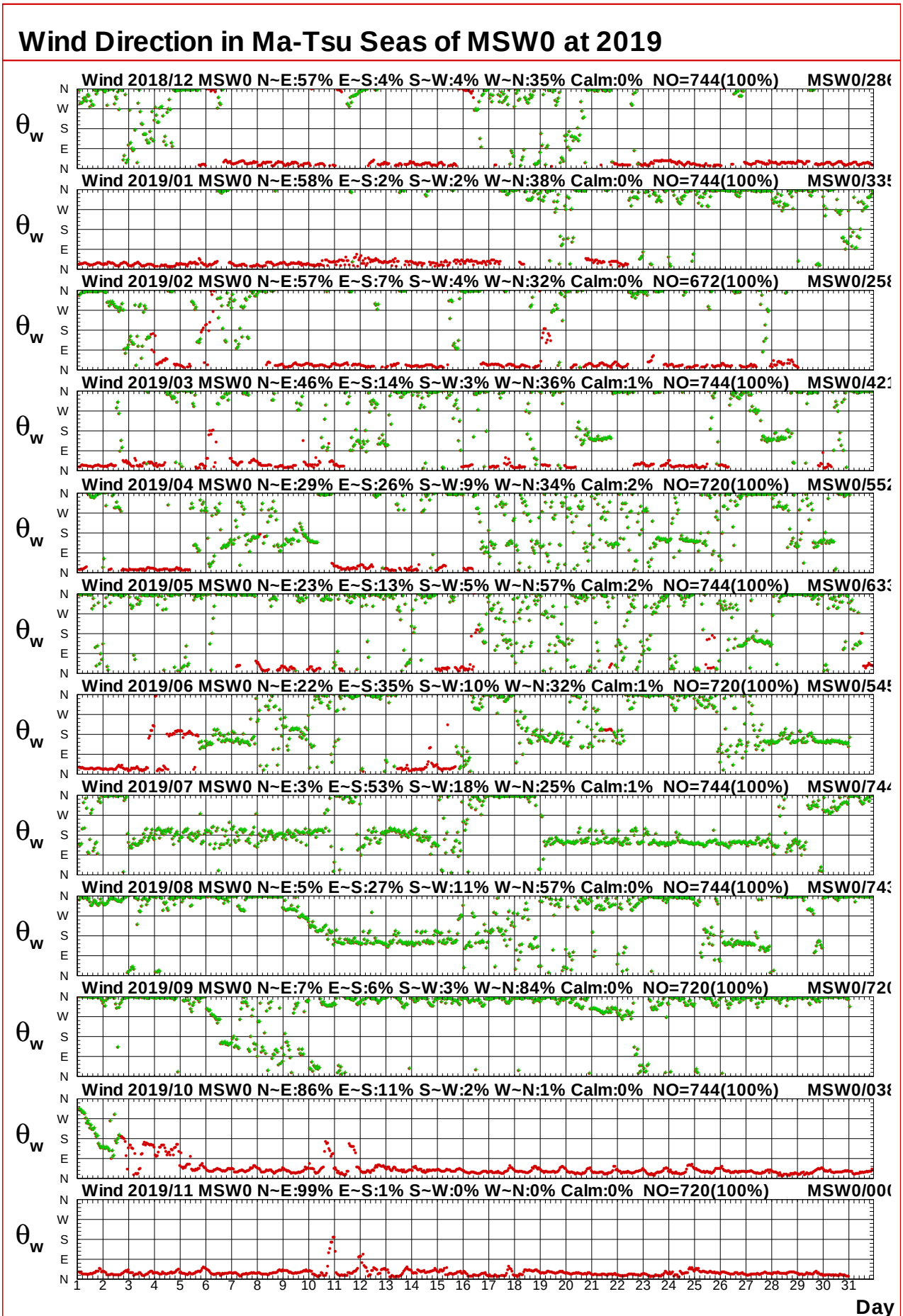


圖1.1.2b　2019年每月馬祖海域 W 站修補前後之風向比較圖

Distribution of Wind Vectores

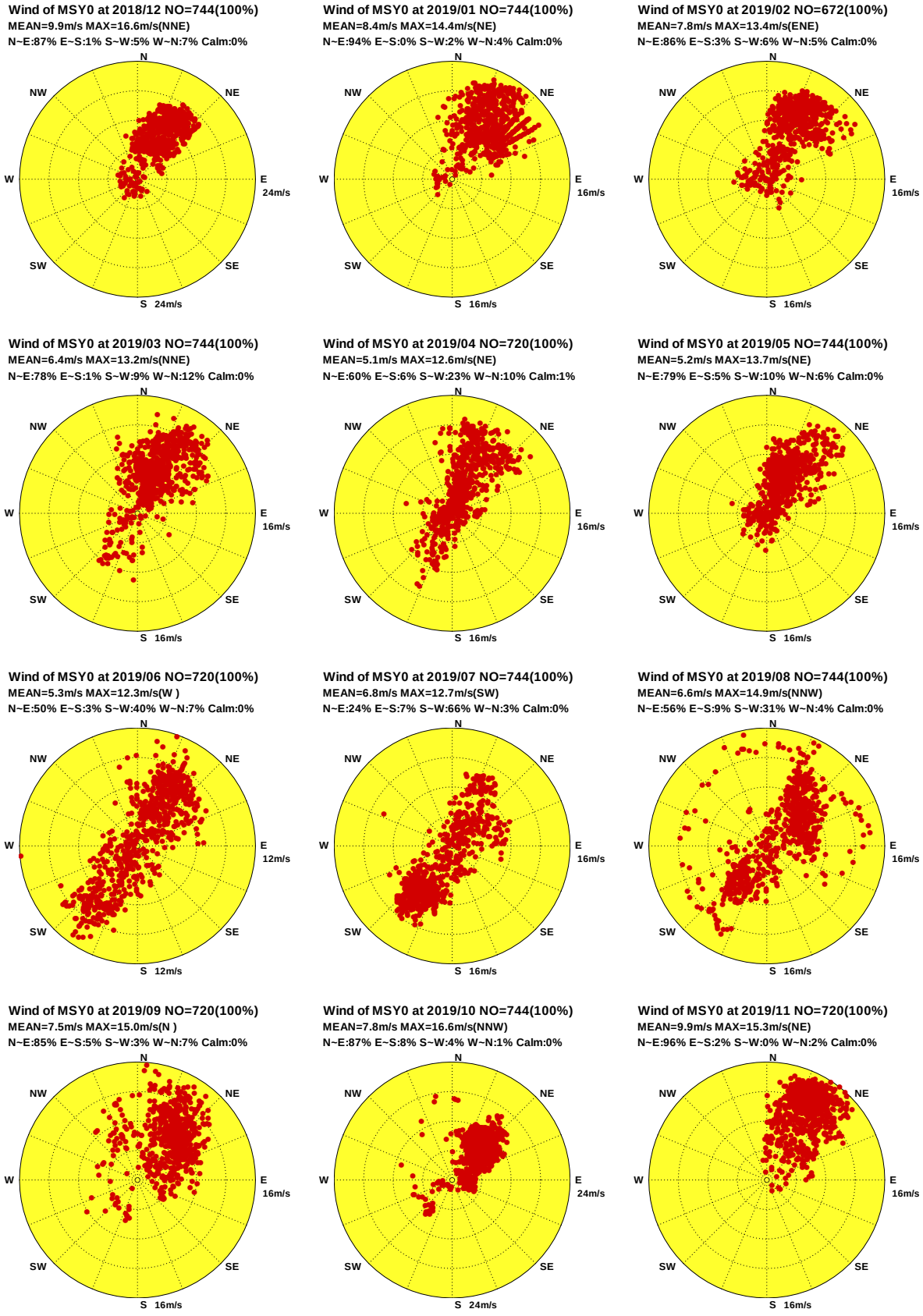


圖1.1.3 2019年馬祖海域每月 Y 站修補後觀測風力向量分佈圖

Distribution of Wind Vectores

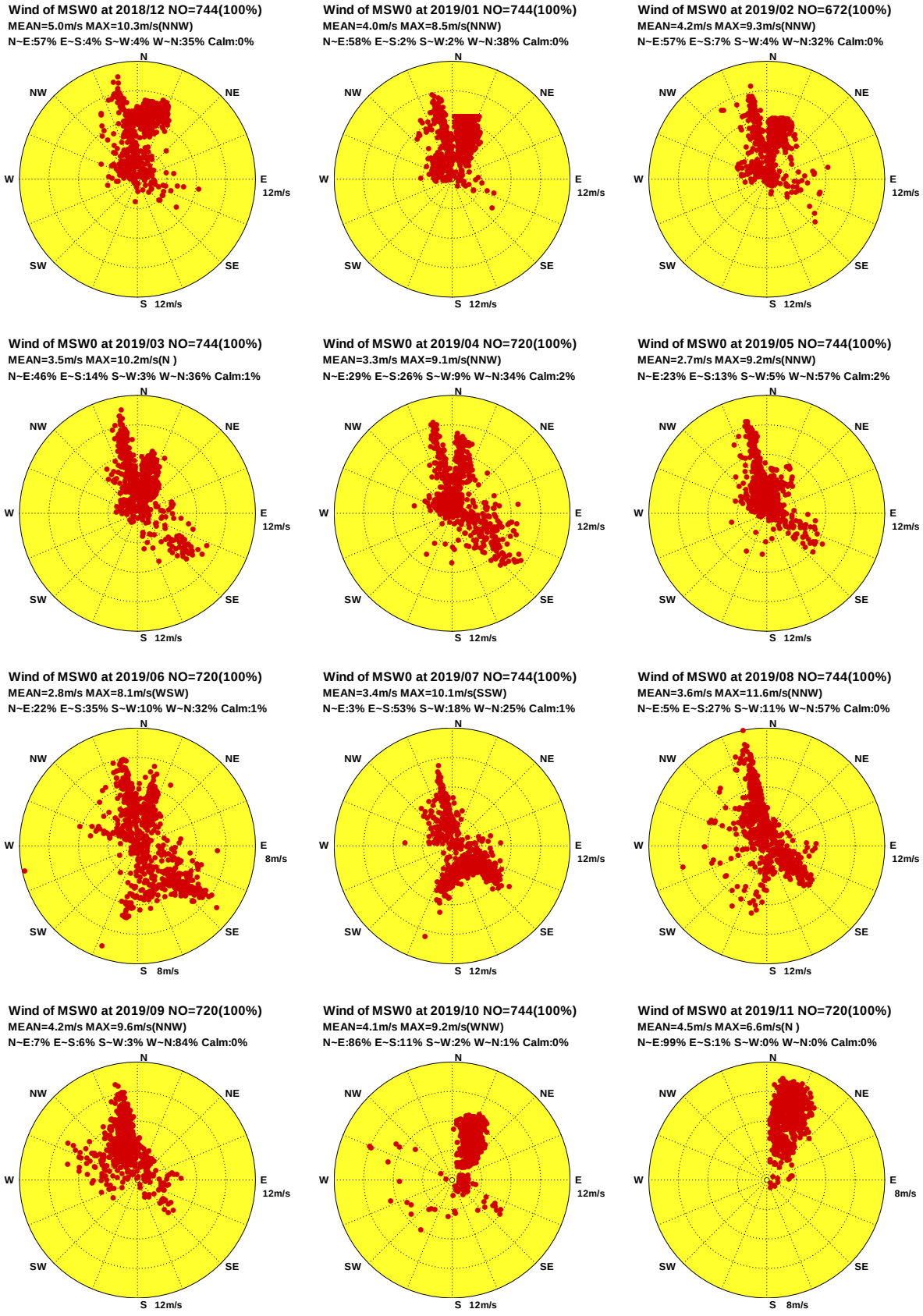


圖1.1.4 2019年馬祖海域每月 W 站修補後觀測風力向量分佈圖

Progressive Vector Diagram of Wind

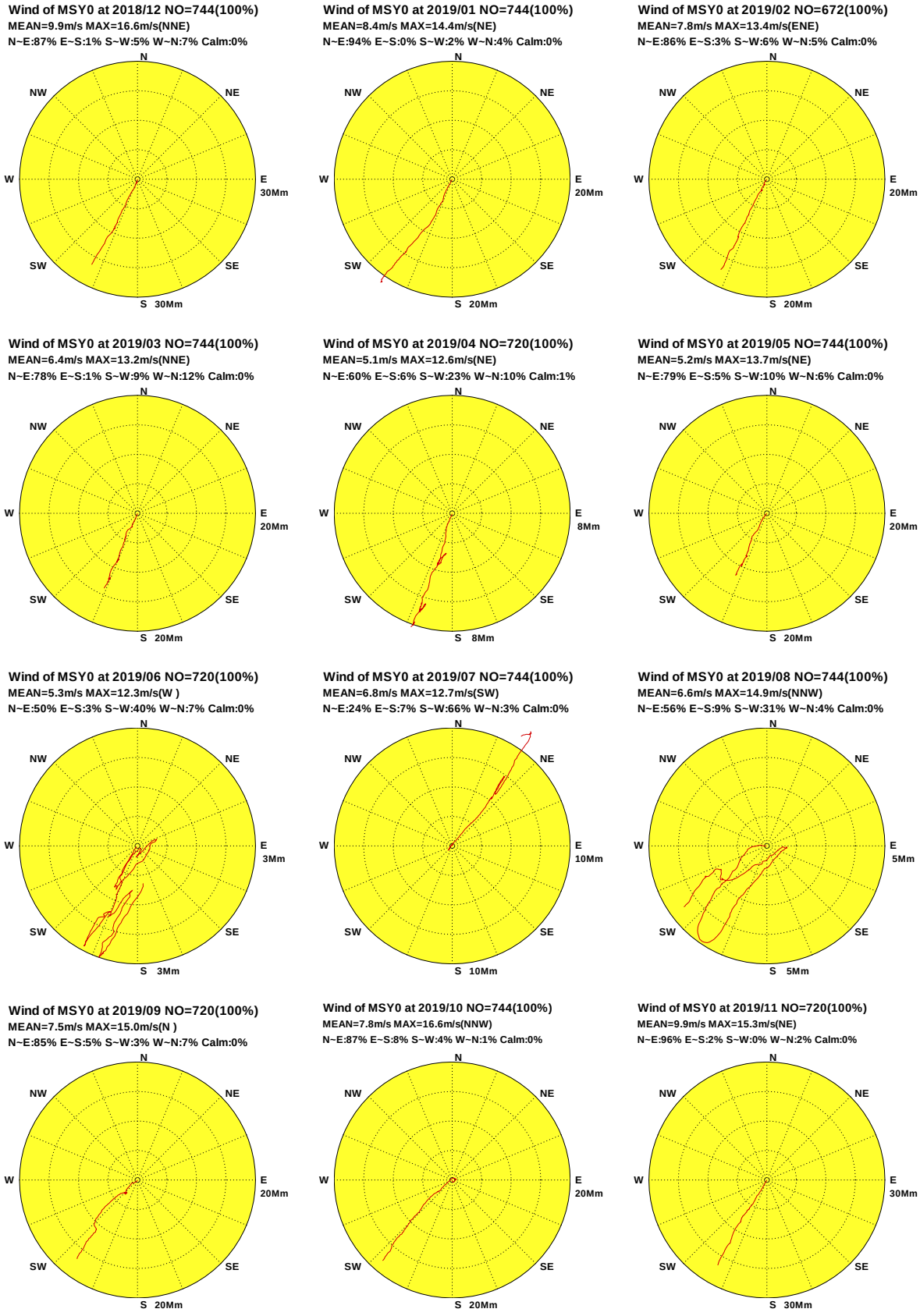


圖1.1.5 2019年馬祖海域每月 Y 站修補後觀測風力向量行進圖

Progressive Vector Diagram of Wind

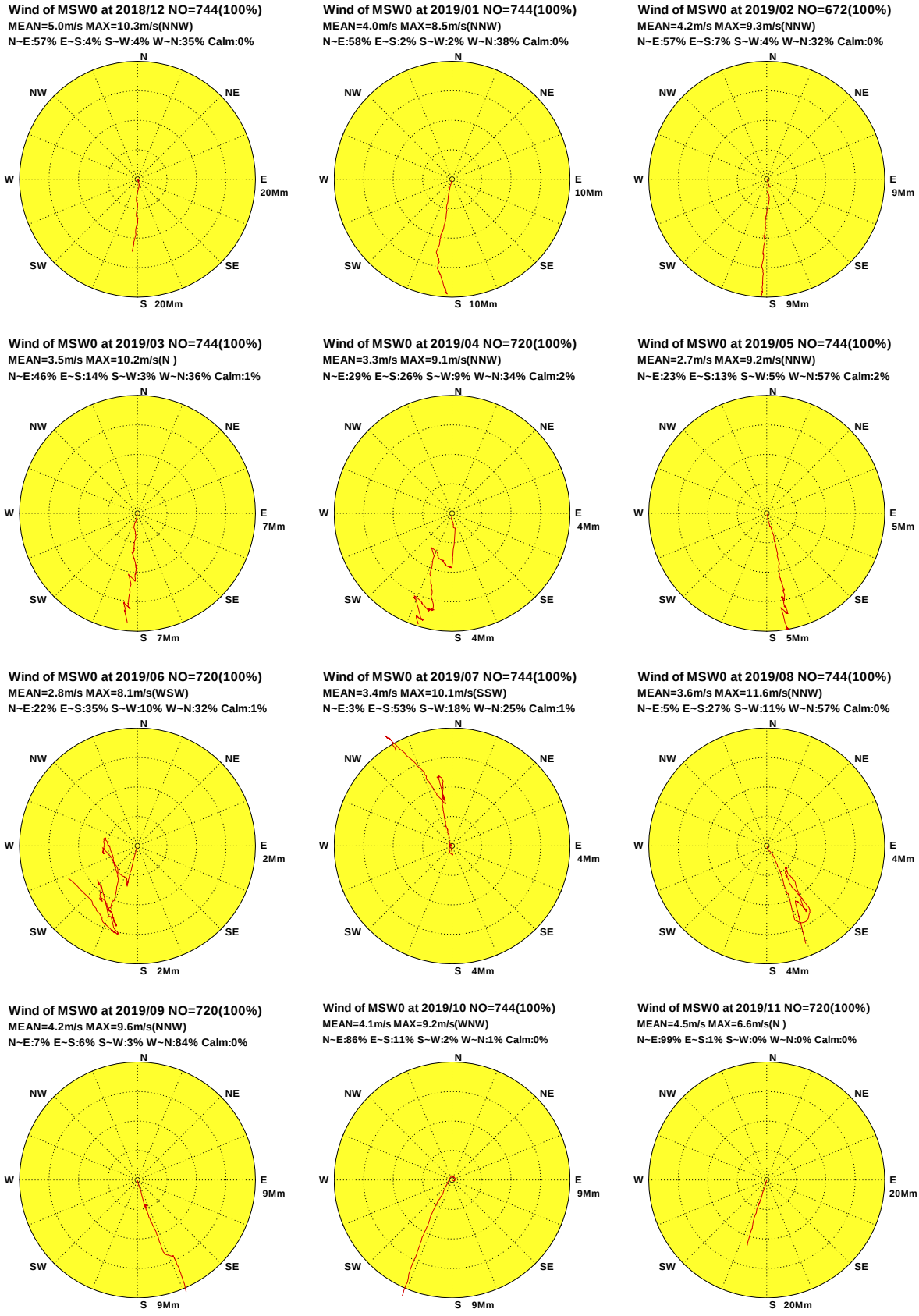


圖1.1.6 2019年馬祖海域每月 W 站修補後觀測風力向量行進圖

1.2　2019 年馬祖海域各測站修補前

風力統計量統計表

表1.2.1　2019年馬祖海域 Y 站修補前風速及風向重要統計量統計表

序號	日期 (年/月)	觀測點數	風速平均值 (m/s)	平均風 風速/風向 (m/s)/(來向)	最大風 風速/風向 (m/s)/(來向)	輕風 <3.3 (%)	和風 ~7.9 (%)	強風 ~13.8 (%)	疾風 >13.8 (%)	風向 N~E (%)	風向 E~S (%)	風向 S~W (%)	風向 W~N (%)	主要風向 方向/百分比
1	2018/12	578(78%)	9.9	9.2/NNE	16.6/NNE	5.0	29.1	46.5	19.4	84.9	.5	5.9	8.7	NNE/51.6%
2	2019/01	367(49%)	9.0	8.6/NNE	14.4/NE	9.0	21.8	67.6	1.6	89.6	.3	4.4	5.7	NNE/50.4%
3	2019/02	636(95%)	7.7	7.1/NNE	13.4/ENE	15.1	23.3	61.6	.0	85.4	3.6	6.0	5.0	NNE/47.3%
4	2019/03	683(92%)	6.5	5.4/NNE	13.2/NNE	14.3	51.0	34.7	.0	80.2	.3	7.8	11.7	NNE/43.8%
5	2019/04	701(97%)	5.1	3.2/NNE	12.6/NE	39.8	32.4	27.8	.0	61.5	6.0	22.5	10.0	NNE/30.7%
6	2019/05	727(98%)	5.2	4.4/NNE	13.7/NE	29.6	52.1	18.3	.0	79.1	5.0	9.6	6.3	NNE/39.8%
7	2019/06	655(91%)	5.1	.2/NW	12.3/W	28.9	57.6	13.6	.0	47.9	3.7	41.8	6.6	NNE/22.7%
8	2019/07	642(86%)	6.8	3.7/SSW	12.7/SW	15.3	40.2	44.5	.0	25.5	7.2	64.2	3.1	SW /33.5%
9	2019/08	705(95%)	6.6	2.0/NE	14.9/NNW	10.4	62.3	26.5	.9	58.4	9.8	27.4	4.4	NE /23.8%
10	2019/09	567(79%)	7.4	6.1/NE	15.0/N	6.7	53.3	39.2	.9	80.6	6.9	3.4	9.2	NE /30.0%
11	2019/10	702(94%)	7.7	6.6/NE	16.6/NNW	10.7	36.2	51.7	1.4	84.8	9.0	4.7	1.6	NE /40.7%
12	2019/11	720(100%)	9.9	9.6/NNE	15.3/NE	3.5	21.0	70.0	5.6	96.1	1.5	.0	2.4	NNE/53.9%
13	2019/冬	1581(73%)	8.8	8.2/NNE	16.6/NNE	10.0	25.0	57.5	7.5	86.2	1.7	5.6	6.5	NNE/49.6%
14	2019/春	2111(96%)	5.6	4.3/NNE	13.7/NE	28.0	45.2	26.8	.0	73.6	3.8	13.3	9.3	NNE/38.0%
15	2019/夏	2002(91%)	6.2	.5/SSW	14.9/NNW	18.0	53.6	28.1	.3	44.5	6.9	43.9	4.7	SW /22.7%
16	2019/秋	1989(91%)	8.4	7.5/NE	16.6/NNW	6.9	35.5	54.8	2.8	87.7	5.7	2.6	4.0	NNE/36.2%
17	2019/年	7683(88%)	7.1	4.7/NNE	16.6/NNE	16.2	40.8	40.7	2.3	72.3	4.7	16.9	6.2	NNE/34.3%

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表1.2.2　2019年馬祖海域 W 站修補前風速及風向重要統計量統計表

序號	日期 (年/月)	觀測點數	風速平均值 (m/s)	平均風 風速/風向 (m/s)/(來向)	最大風 風速/風向 (m/s)/(來向)	輕風 <3.3 (%)	和風 ~7.9 (%)	強風 ~13.8 (%)	疾風 >13.8 (%)	風向 N~E (%)	風向 E~S (%)	風向 S~W (%)	風向 W~N (%)	主要風向 方向/百分比
1	2018/12	286(38%)	3.0	2.3/NNW	10.3/NNW	68.9	24.5	6.6	.0	12.6	11.5	10.1	65.7	NNW/36.0%
2	2019/01	335(45%)	3.5	3.1/NNW	8.5/NNW	53.4	45.7	.9	.0	6.9	5.7	5.1	82.4	NNW/48.7%
3	2019/02	258(38%)	3.9	3.0/NNW	9.3/NNW	46.1	50.0	3.9	.0	5.0	12.4	7.8	74.8	NNW/47.7%
4	2019/03	421(57%)	3.6	1.9/N	10.2/N	53.7	41.6	4.8	.0	6.9	23.3	5.7	64.1	NNW/37.1%
5	2019/04	552(77%)	2.9	.6/NE	9.1/NNW	62.0	35.9	2.2	.0	9.6	34.4	11.8	44.2	NNW/22.8%
6	2019/05	633(85%)	2.8	1.9/NNW	9.2/NNW	68.9	28.8	2.4	.0	12.2	15.3	5.5	67.0	NNW/40.0%
7	2019/06	545(76%)	2.9	.5/ESE	8.1/WSW	56.5	43.3	.2	.0	6.2	40.9	10.3	42.6	NNW/22.6%
8	2019/07	744(100%)	3.4	1.4/SSE	10.1/SSW	48.1	51.6	.3	.0	3.1	53.6	18.0	25.3	SE /28.8%
9	2019/08	743(100%)	3.6	1.3/NNW	11.6/NNW	48.7	47.5	3.8	.0	5.0	26.8	11.6	56.7	NNW/36.5%
10	2019/09	720(100%)	4.2	3.6/NNW	9.6/NNW	32.8	64.7	2.5	.0	7.1	5.8	3.3	83.8	NNW/52.5%
11	2019/10	38(5%)	4.4	2.0/SSW	9.2/WNW	26.3	68.4	5.3	.0	2.6	42.1	36.8	18.4	SE /23.7%
12	2019/11													
13	2019/冬	879(41%)	3.5	2.8/NNW	10.3/NNW	56.3	40.0	3.6	.0	8.2	9.6	7.5	74.7	NNW/44.3%
14	2019/春	1606(73%)	3.0	1.4/N	10.2/N	62.5	34.6	2.9	.0	9.9	24.0	7.7	58.4	NNW/33.3%
15	2019/夏	2032(92%)	3.4	.2/E	11.6/NNW	50.6	47.9	1.5	.0	4.6	40.4	13.6	41.4	NNW/24.7%
16	2019/秋	758(35%)	4.2	3.4/NNW	9.6/NNW	32.5	64.9	2.6	.0	6.9	7.7	5.0	80.5	NNW/49.9%
17	2019/年	5275(60%)	3.4	1.3/NNW	11.6/NNW	52.6	45.0	2.5	.0	7.1	25.6	9.6	57.7	NNW/34.2%

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表1.2.3　2019年馬祖海域 E 站修補前風速及風向重要統計量統計表

序號	日期 (年/月)	觀測點數	風速 平均值 (m/s)	平均風 風速/風向 (m/s)/(來向)	最大風 風速/風向 (m/s)/(來向)	輕風 <3.3 (%)	和風 ~7.9 (%)	強風 ~13.8 (%)	疾風 >13.8 (%)	風向 N~E (%)	風向 E~S (%)	風向 S~W (%)	風向 W~N (%)	主要風向 方向/百分比
1	2018/12	744(100%)	4.0	3.5/NNE	9.7/ENE	41.8	56.2	2.0	.0	83.9	1.6	4.6	9.9	NNE/30.2%
2	2019/01	744(100%)	3.6	3.2/NNE	7.6/ENE	45.4	54.6	.0	.0	86.3	2.4	2.4	8.9	NE /29.4%
3	2019/02	672(100%)	3.4	2.7/NE	9.3/ENE	49.3	50.1	.6	.0	78.1	5.4	6.8	9.7	NE /28.7%
4	2019/03	744(100%)	3.3	1.8/NNE	11.2/SSW	58.3	39.8	1.9	.0	71.9	4.2	9.5	14.4	N /26.6%
5	2019/04	720(100%)	2.9	.7/NNE	11.6/SSW	63.8	32.9	3.3	.0	53.9	9.0	21.4	15.7	N /26.1%
6	2019/05	744(100%)	2.6	1.8/NNE	8.7/ENE	73.4	26.2	.4	.0	73.7	4.3	10.5	11.6	N /31.7%
7	2019/06	720(100%)	3.2	.8/SSW	9.8/SSW	63.3	32.9	3.8	.0	50.8	7.5	35.0	6.7	SSW/20.0%
8	2019/07	744(100%)	4.6	3.1/SSW	13.0/SSW	33.3	55.5	11.2	.0	27.7	6.2	62.8	3.4	SSW/35.2%
9	2019/08	744(100%)	3.5	.9/NE	11.2/ENE	52.2	44.5	3.4	.0	56.6	7.9	25.9	9.5	NE /21.4%
10	2019/09	720(100%)	3.7	3.1/NE	8.3/NE	39.3	60.3	.4	.0	84.4	4.6	1.9	9.0	NE /31.8%
11	2019/10	744(100%)	3.6	3.1/NE	8.9/ENE	38.8	60.3	.8	.0	86.0	6.3	3.4	4.3	NE /39.0%
12	2019/11	720(100%)	4.2	3.9/NNE	8.4/NE	32.9	65.8	1.3	.0	88.1	1.4	.7	9.9	N /33.2%
13	2019/冬	2160(100%)	3.7	3.1/NNE	9.7/ENE	45.4	53.8	.9	.0	82.9	3.1	4.5	9.5	N /26.3%
14	2019/春	2208(100%)	3.0	1.4/NNE	11.6/SSW	65.2	33.0	1.9	.0	66.6	5.8	13.7	13.9	N /28.2%
15	2019/夏	2208(100%)	3.8	1.1/S	13.0/SSW	49.5	44.4	6.1	.0	45.0	7.2	41.3	6.5	SSW/21.1%
16	2019/秋	2184(100%)	3.8	3.3/NE	8.9/ENE	37.0	62.1	.8	.0	86.2	4.1	2.0	7.7	NE /33.5%
17	2019/年	8760(100%)	3.6	1.7/NE	13.0/SSW	49.3	48.3	2.4	.0	70.1	5.1	15.5	9.4	NE /22.3%

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表1.2.4　2019年馬祖海域 B 站修補前風速及風向重要統計量統計表

序號	日期 (年/月)	觀測點數	風速平均值 (m/s)	平均風 風速/風向 (m/s)/(來向)	最大風 風速/風向 (m/s)/(來向)	輕風 <3.3 (%)	和風 ~7.9 (%)	強風 ~13.8 (%)	疾風 >13.8 (%)	風向 N~E (%)	風向 E~S (%)	風向 S~W (%)	風向 W~N (%)	主要風向 方向/百分比
1	2018/12													
2	2019/01													
3	2019/02	133(20%)	2.8	2.5/NNE	5.3/NNE	65.4	34.6	.0	.0	73.7	12.8	.8	12.8	NNE/59.4%
4	2019/03	82(11%)	1.8	1.3/NNE	4.6/NNE	95.1	4.9	.0	.0	70.7	11.0	9.8	8.5	NNE/42.7%
5	2019/04													
6	2019/05	216(29%)	2.5	1.6/NNE	7.3/N	64.8	35.2	.0	.0	51.9	15.3	15.3	17.6	NNE/30.1%
7	2019/06	718(100%)	2.9	.4/ESE	8.1/SSW	57.0	42.8	.3	.0	42.1	22.4	25.2	10.3	NNE/24.0%
8	2019/07	743(100%)	4.0	2.1/S	11.6/SSW	36.9	61.1	2.0	.0	19.5	22.5	48.7	9.3	SSW/34.5%
9	2019/08	741(100%)	2.9	.7/N	8.6/S	66.9	32.8	.3	.0	41.8	12.4	22.7	23.1	NNE/22.7%
10	2019/09	715(99%)	2.9	2.4/N	9.9/N	67.1	32.4	.4	.0	52.7	6.0	2.5	38.7	N /37.6%
11	2019/10	744(100%)	3.1	2.5/N	7.2/N	59.8	40.2	.0	.0	60.2	8.3	3.2	28.2	N /37.0%
12	2019/11	323(45%)	3.9	3.6/NNE	8.6/NNE	39.9	58.2	1.9	.0	73.7	4.6	.6	21.1	NNE/48.3%
13	2019/冬	133(6%)	2.8	2.5/NNE	5.3/NNE	65.4	34.6	.0	.0	73.7	12.8	.8	12.8	NNE/59.4%
14	2019/春	298(14%)	2.3	1.5/NNE	7.3/N	73.2	26.8	.0	.0	57.0	14.1	13.8	15.1	NNE/33.6%
15	2019/夏	2202(100%)	3.3	.5/S	11.6/SSW	53.5	45.6	.9	.0	34.4	19.1	32.3	14.3	SSW/20.3%
16	2019/秋	1782(82%)	3.2	2.6/N	9.9/N	59.1	40.3	.5	.0	59.7	6.7	2.5	31.1	N /37.3%
17	2019/年	4415(50%)	3.1	1.0/NNE	11.6/SSW	57.5	41.9	.6	.0	47.3	13.6	18.1	21.1	NNE/27.2%

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表1.2.5　2019年馬祖海域 C 站修補前風速及風向重要統計量統計表

序號	日期 (年/月)	觀測點數	風速 平均值 (m/s)	平均風 風速/風向 (m/s)/(來向)	最大風 風速/風向 (m/s)/(來向)	輕風 <3.3 (%)	和風 ~7.9 (%)	強風 ~13.8 (%)	疾風 >13.8 (%)	風向 N~E (%)	風向 E~S (%)	風向 S~W (%)	風向 W~N (%)	主要風向 方向/百分比
1	2018/12	743(100%)	3.9	3.6/NNW	8.5/NNW	36.5	63.3	.3	.0	4.4	3.5	3.6	88.4	NNW/67.8%
2	2019/01	744(100%)	3.8	3.6/NNW	9.1/NNW	41.8	57.1	1.1	.0	6.6	2.6	1.6	89.2	NNW/69.8%
3	2019/02	671(100%)	3.3	2.9/NNW	8.6/N	56.2	43.4	.4	.0	10.4	6.7	2.5	80.3	NNW/57.2%
4	2019/03	743(100%)	3.5	2.7/NNW	9.2/NNW	51.8	45.8	2.4	.0	12.2	8.3	7.0	72.4	NNW/54.0%
5	2019/04	719(100%)	2.7	1.3/NNW	8.9/NNW	68.8	30.7	.4	.0	14.9	19.5	12.2	53.4	NNW/32.7%
6	2019/05	734(99%)	3.0	2.3/NNW	7.9/SSE	62.9	37.1	.0	.0	13.4	12.5	5.0	69.1	NNW/51.2%
7	2019/06	719(100%)	2.9	.7/WSW	7.8/SSW	60.1	39.9	.0	.0	12.5	13.9	32.7	40.9	NNW/26.8%
8	2019/07	741(100%)	4.0	2.6/SSW	12.0/SSE	38.5	58.7	2.8	.0	7.2	19.4	53.3	20.1	SSW/35.4%
9	2019/08	742(100%)	3.4	.8/WSW	9.5/SSE	57.3	39.9	2.8	.0	4.0	17.3	23.6	55.1	NNW/30.9%
10	2019/09	594(83%)	2.8	2.2/NNW	8.9/NW	74.1	24.9	1.0	.0	5.6	4.9	8.8	80.8	NNW/39.1%
11	2019/10	744(100%)	2.5	1.5/NNW	10.1/NNW	80.9	19.0	.1	.0	7.0	10.2	10.3	72.4	NNW/36.8%
12	2019/11	720(100%)	3.5	3.2/NNW	7.6/NNW	46.9	53.1	.0	.0	5.4	1.7	4.4	88.5	NNW/61.7%
13	2019/冬	2158(100%)	3.7	3.4/NNW	9.1/NNW	44.4	55.0	.6	.0	7.0	4.2	2.6	86.2	NNW/65.2%
14	2019/春	2196(100%)	3.1	2.1/NNW	9.2/NNW	61.1	37.9	1.0	.0	13.5	13.4	8.1	65.1	NNW/46.1%
15	2019/夏	2202(100%)	3.4	1.2/SW	12.0/SSE	51.9	46.2	1.9	.0	7.9	16.9	36.6	38.7	NNW/23.8%
16	2019/秋	2058(94%)	2.9	2.3/NNW	10.1/NNW	67.1	32.6	.3	.0	6.0	5.7	7.8	80.5	NNW/46.2%
17	2019/年	8614(98%)	3.3	1.8/NNW	12.0/SSE	56.0	43.0	1.0	.0	8.6	10.1	13.9	67.3	NNW/45.2%

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表1.2.6　2019年馬祖海域 D 站修補前風速及風向重要統計量統計表

序號	日期 (年/月)	觀測點數	風速 平均值 (m/s)	平均風 風速/風向 (m/s)/(來向)	最大風 風速/風向 (m/s)/(來向)	輕風 <3.3 (%)	和風 ~7.9 (%)	強風 ~13.8 (%)	疾風 >13.8 (%)	風向 N~E (%)	風向 E~S (%)	風向 S~W (%)	風向 W~N (%)	主要風向 方向/百分比
1	2018/12	743(100%)	8.2	8.0/NNE	15.6/NNE	10.1	32.6	53.7	3.6	92.9	4.8	.1	2.2	NNE/72.9%
2	2019/01	742(100%)	8.3	8.2/NNE	13.9/NNE	4.7	35.0	60.0	.3	96.2	2.7	.1	.9	NNE/90.6%
3	2019/02	671(100%)	7.6	7.3/NNE	13.1/NNE	16.4	26.4	57.2	.0	88.7	7.0	.7	3.6	NNE/81.8%
4	2019/03	742(100%)	5.9	5.3/NNE	13.1/NNE	16.7	57.8	25.5	.0	87.7	8.0	.5	3.8	NNE/76.4%
5	2019/04	610(85%)	5.0	3.3/NNE	13.7/NNE	38.7	38.7	22.6	.0	64.3	25.6	3.0	7.2	NNE/53.4%
6	2019/05	733(99%)	4.6	4.2/NNE	12.3/NNE	36.0	49.9	14.1	.0	81.7	11.2	2.3	4.8	NNE/69.4%
7	2019/06	718(100%)	3.7	1.4/NE	10.6/NNE	45.5	52.9	1.5	.0	52.5	40.3	2.8	4.5	NNE/43.0%
8	2019/07	743(100%)	4.1	1.9/SSE	9.3/NNE	34.6	62.9	2.6	.0	27.3	67.8	2.4	2.4	S /32.2%
9	2019/08	744(100%)	4.4	2.5/NNE	14.9/N	39.7	51.3	8.5	.5	63.0	30.5	.8	5.6	NNE/48.4%
10	2019/09	719(100%)	5.8	5.5/NNE	15.0/N	22.3	56.5	21.0	.3	90.0	3.9	.6	5.6	NNE/71.1%
11	2019/10	741(100%)	5.6	5.4/NNE	17.2/N	21.9	57.8	19.7	.7	89.7	6.7	.5	3.0	NNE/75.2%
12	2019/11													
13	2019/冬	2156(100%)	8.0	7.8/NNE	15.6/NNE	10.2	31.5	57.0	1.3	92.7	4.8	.3	2.2	NNE/81.8%
14	2019/春	2085(94%)	5.2	4.3/NNE	13.7/NNE	29.9	49.4	20.6	.0	78.8	14.2	1.9	5.1	NNE/67.2%
15	2019/夏	2205(100%)	4.0	1.1/ENE	14.9/N	39.9	55.7	4.2	.2	47.6	46.3	2.0	4.2	NNE/37.5%
16	2019/秋	1460(67%)	5.7	5.4/NNE	17.2/N	22.1	57.1	20.3	.5	89.9	5.3	.5	4.2	NNE/73.2%
17	2019/年	7906(90%)	5.7	4.5/NNE	17.2/N	25.9	47.7	25.9	.5	75.9	18.9	1.2	3.9	NNE/64.0%

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表1.2.7　2019年馬祖海域Ⅰ站修補前風速及風向重要統計量統計表

序號	日期 (年/月)	觀測點數	風速平均值 (m/s)	平均風 風速/風向 (m/s)/(來向)	最大風 風速/風向 (m/s)/(來向)	輕風 <3.3 (%)	和風 ~7.9 (%)	強風 ~13.8 (%)	疾風 >13.8 (%)	風向 N~E (%)	風向 E~S (%)	風向 S~W (%)	風向 W~N (%)	主要風向 方向/百分比
1	2018/12	743(100%)	6.3	6.1/NNE	12.4/NNE	24.1	36.3	39.6	.0	91.7	1.3	5.8	1.2	NNE/79.0%
2	2019/01	744(100%)	5.7	5.6/NNE	11.2/NNE	21.0	56.7	22.3	.0	95.7	1.2	2.6	.5	NNE/81.3%
3	2019/02	670(100%)	5.0	4.6/NNE	9.4/NNE	27.9	60.0	12.1	.0	87.2	3.0	8.8	1.0	NNE/70.6%
4	2019/03	743(100%)	4.0	3.4/NNE	11.1/NNE	46.7	43.6	9.7	.0	86.5	.9	10.1	2.4	NNE/54.5%
5	2019/04	720(100%)	3.2	2.0/NNE	9.4/NNE	62.6	32.5	4.9	.0	67.5	6.4	24.6	1.5	NNE/46.7%
6	2019/05	733(99%)	3.2	2.7/NNE	10.1/NNE	58.3	37.8	4.0	.0	81.4	3.5	14.3	.7	NNE/43.9%
7	2019/06	720(100%)	2.4	.3/ENE	6.4/NNE	79.2	20.8	.0	.0	51.4	1.5	46.7	.4	NE /36.3%
8	2019/07	741(100%)	1.5	1.1/SSW	5.1/WSW	97.7	2.3	.0	.0	16.9	5.1	69.2	8.8	SSW/39.1%
9	2019/08	744(100%)	1.6	.6/NE	7.7/NE	86.4	13.6	.0	.0	63.0	2.4	34.1	.4	NE /42.7%
10	2019/09	717(100%)	3.9	3.7/NE	11.6/NNE	43.7	52.2	4.2	.0	90.8	1.5	6.4	1.3	NE /55.0%
11	2019/10	741(100%)	4.4	4.1/NNE	10.7/NNE	35.5	58.3	6.2	.0	93.0	.7	5.9	.4	NNE/54.1%
12	2019/11	205(29%)	7.6	7.5/NNE	10.5/NNE	.5	54.1	45.4	.0	100.0	.0	.0	.0	NNE/94.1%
13	2019/冬	2157(100%)	5.7	5.5/NNE	12.4/NNE	24.2	50.7	25.1	.0	91.7	1.8	5.6	.9	NNE/77.2%
14	2019/春	2196(100%)	3.5	2.7/NNE	11.1/NNE	55.8	38.0	6.2	.0	78.6	3.6	16.3	1.5	NNE/48.4%
15	2019/夏	2205(100%)	1.8	.2/SSE	7.7/NE	87.8	12.2	.0	.0	43.7	3.0	50.0	3.2	NE /29.5%
16	2019/秋	1663(76%)	4.6	4.3/NNE	11.6/NNE	34.7	55.1	10.2	.0	92.9	1.0	5.4	.7	NNE/49.1%
17	2019/年	8221(94%)	3.8	3.0/NNE	12.4/NNE	51.8	37.9	10.3	.0	75.6	2.4	20.3	1.7	NNE/45.6%

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1.3　2019 年馬祖海域主要測站 1(修補後)與其他測站(修補前)風力歷線比較圖

Wind Speed in Ma-Tsu Seas of MSY0 at 2019

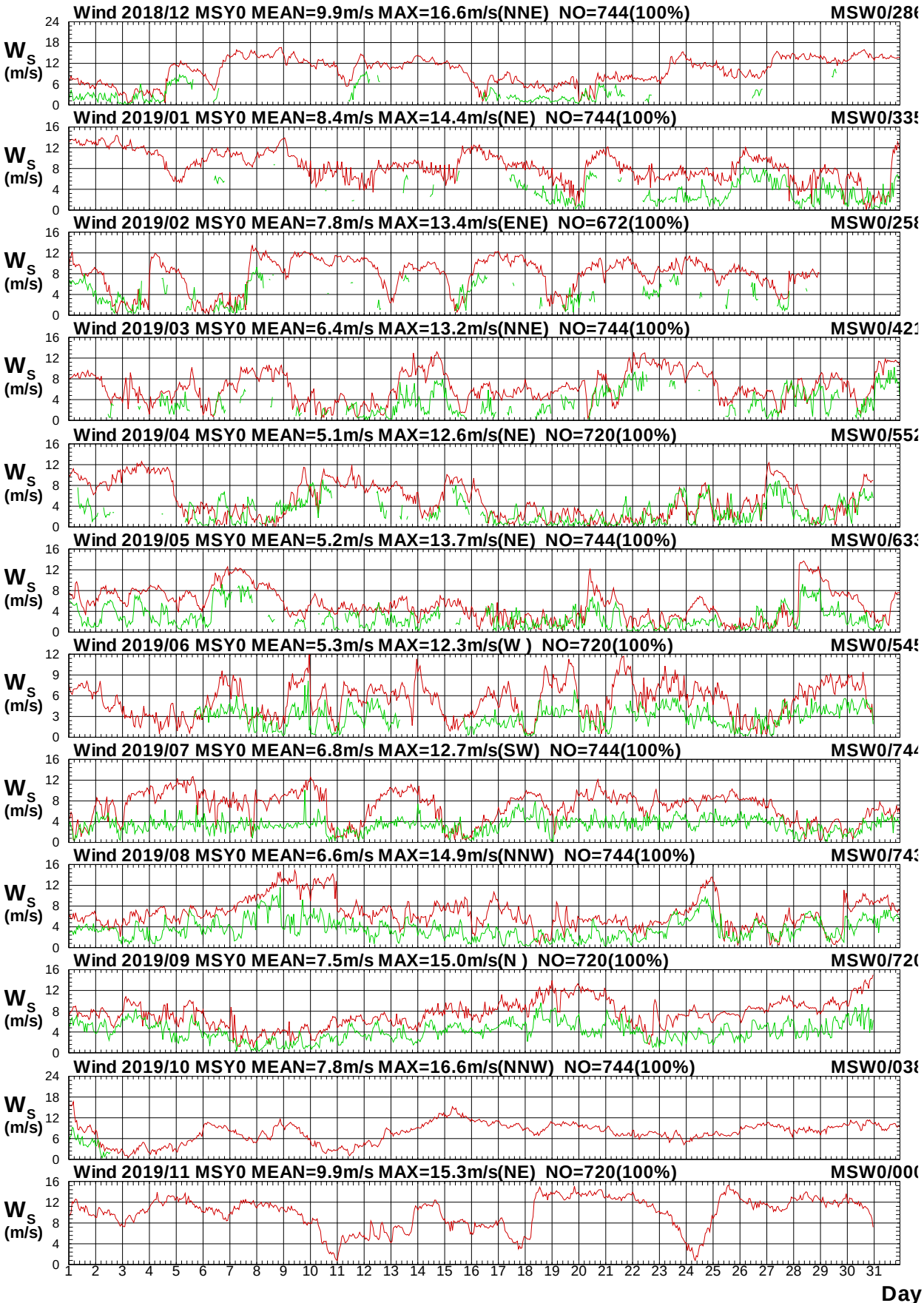


圖1.3.1a　2019年每月馬祖海域 Y 站與 W 站風速比較圖

W18CMSY0.1HA W18CMSW0.1H0 W191MSY0.1HA W191MSW0.1H0 W192MSY0.1HA W192MSW0.1H0
W193MSY0.1HA W193MSW0.1H0 W194MSY0.1HA W194MSW0.1H0 W195MSY0.1HA W195MSW0.1H0

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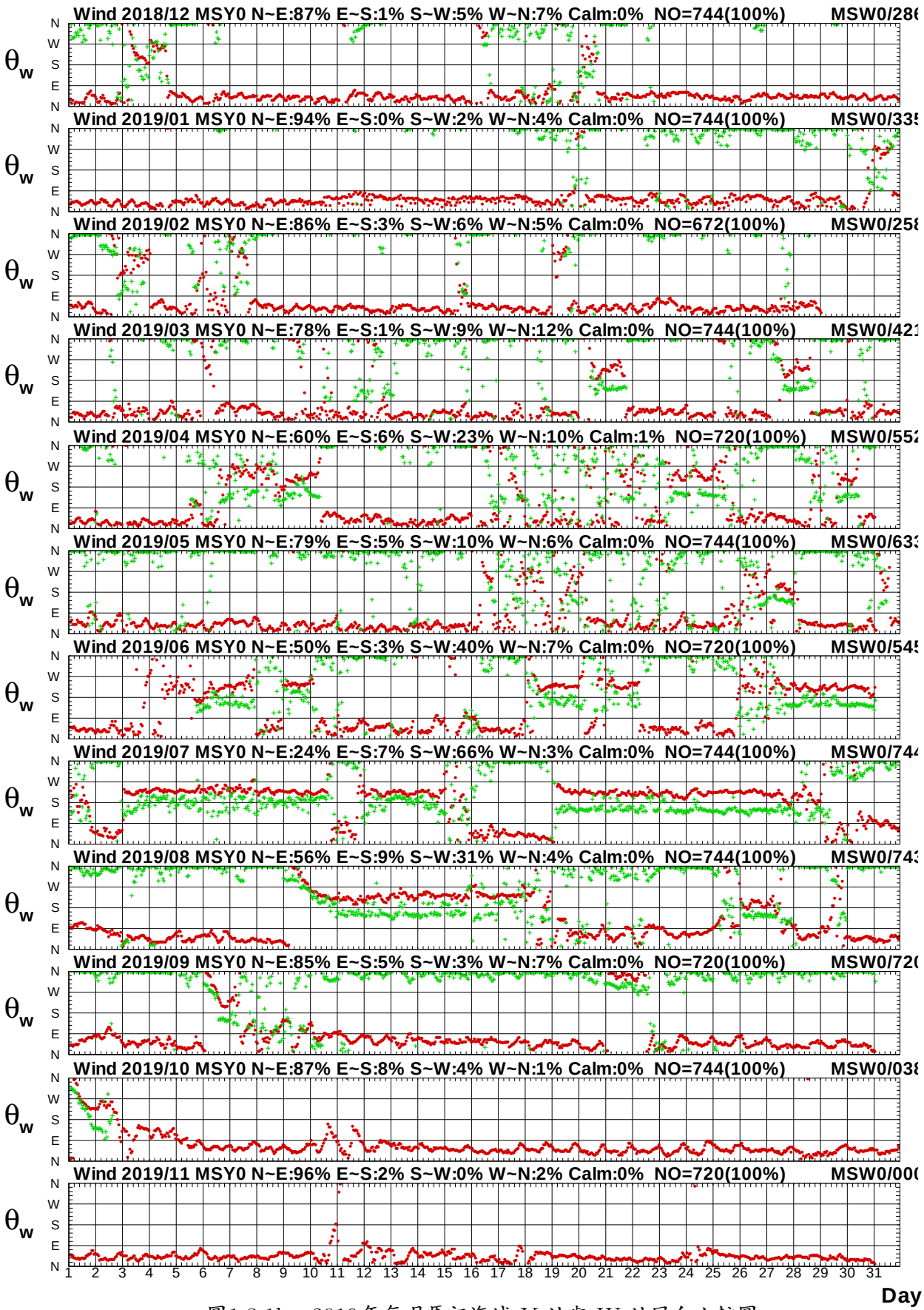


圖1.3.1b　2019年每月馬祖海域 Y 站與 W 站風向比較圖

Wind Speed in Ma-Tsu Seas of MSY0 at 2019

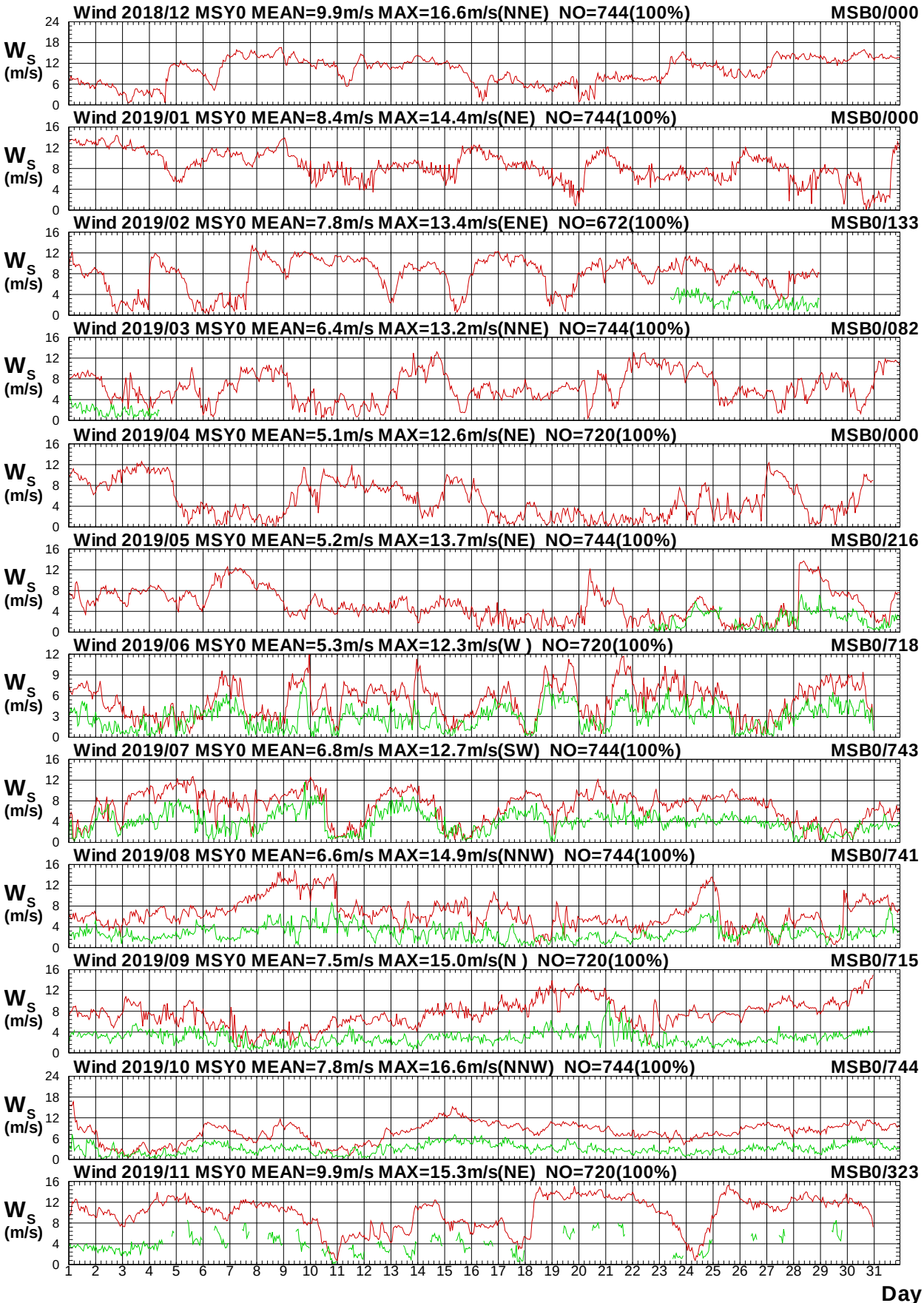


圖1.3.2a　2019年每月馬祖海域 Y 站與 B 站風速比較圖

W18CMSY0.1HA W18CMSB0.1H0 W191MSY0.1HA W191MSB0.1H0 W192MSY0.1HA W192MSB0.1H0
W193MSY0.1HA W193MSB0.1H0 W194MSY0.1HA W194MSB0.1H0 W195MSY0.1HA W195MSB0.1H0

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Wind Direction in Ma-Tsu Seas of MSY0 at 2019

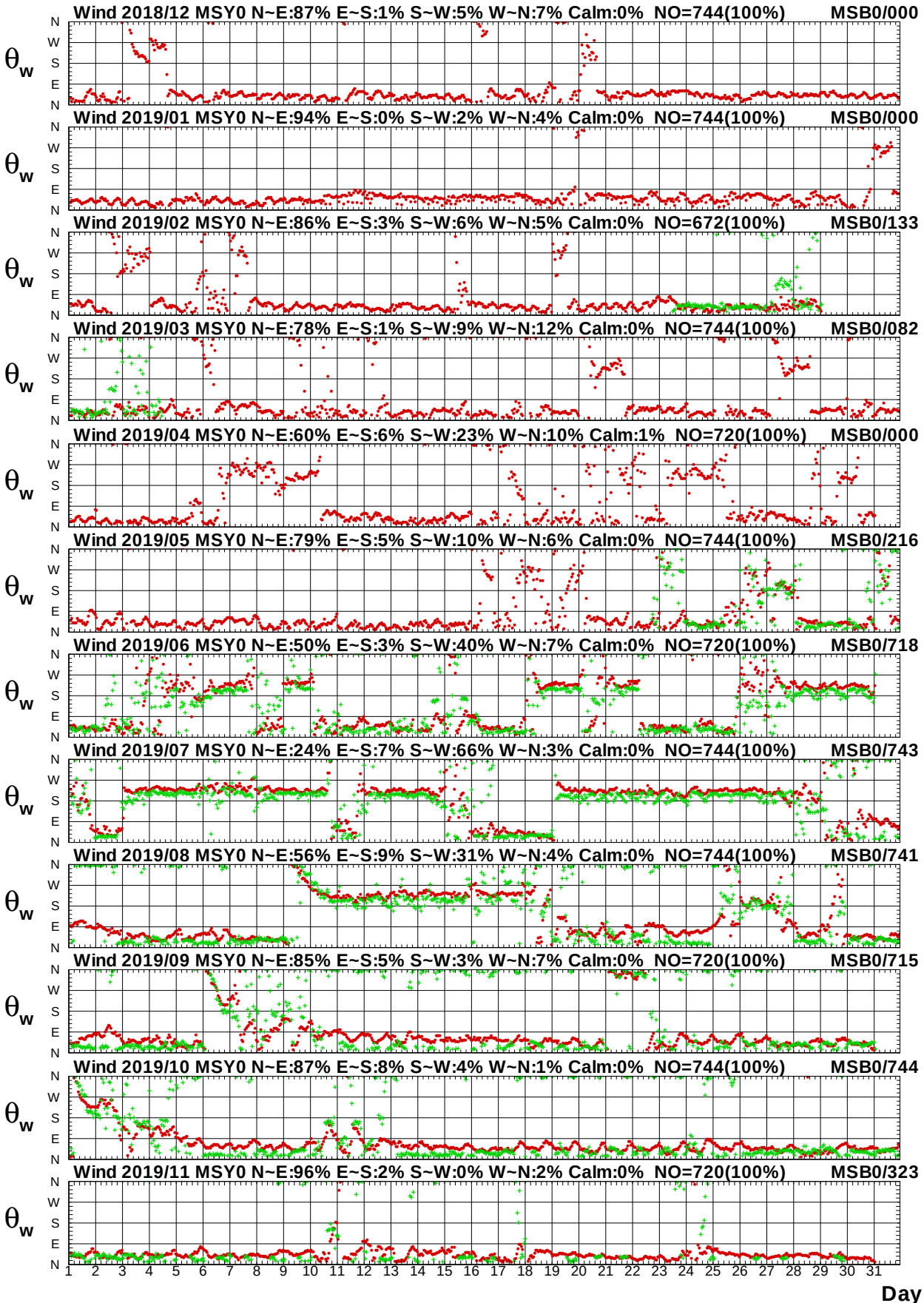


圖1.3.2b　2019年每月馬祖海域 Y 站與 B 站風向比較圖

W18CMSY0.1HA W18CMSB0.1H0 W191MSY0.1HA W191MSB0.1H0 W192MSY0.1HA W192MSB0.1H0
W193MSY0.1HA W193MSB0.1H0 W194MSY0.1HA W194MSB0.1H0 W195MSY0.1HA W195MSB0.1H0

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Wind Speed in Ma-Tsu Seas of MSY0 at 2019

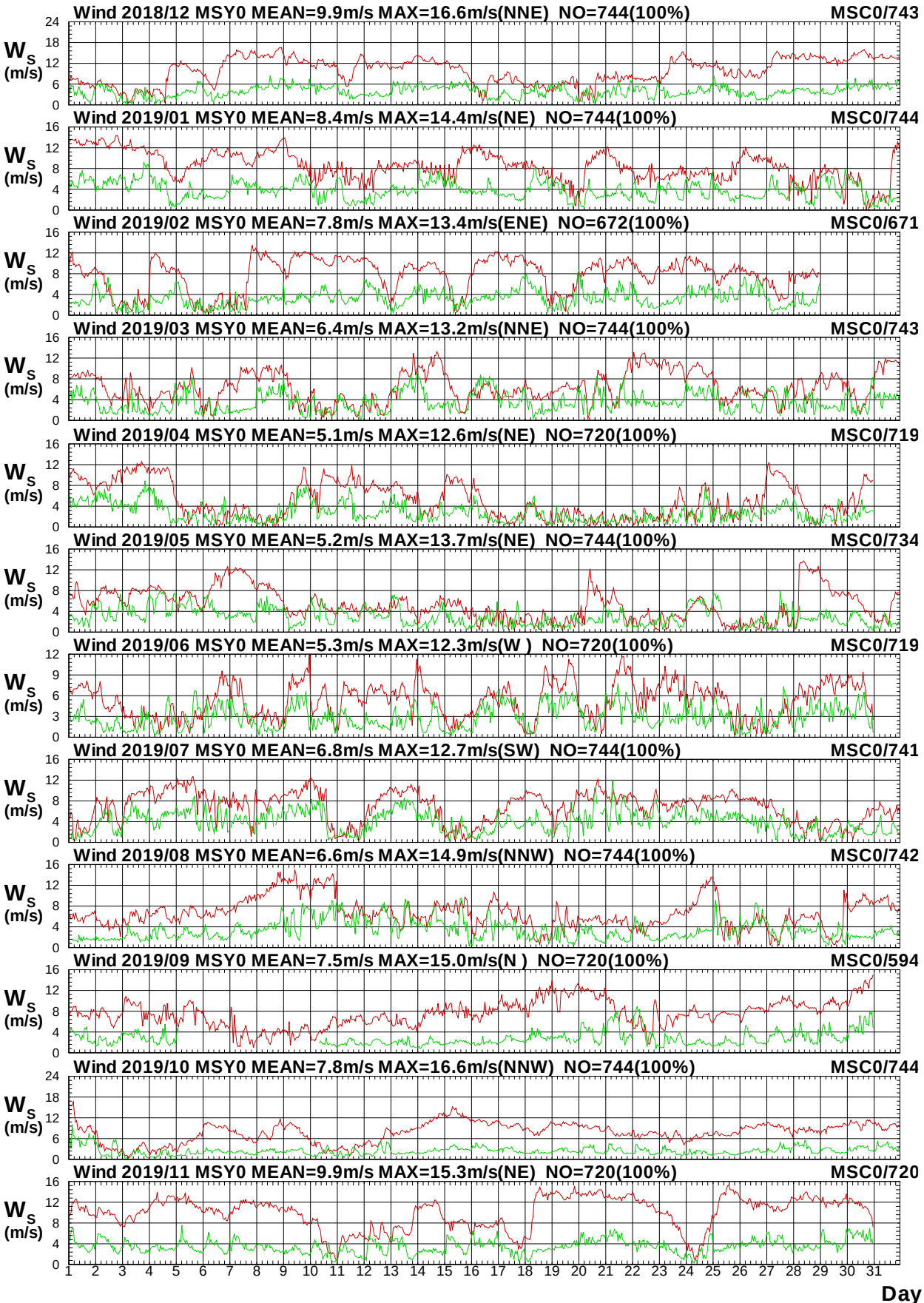


圖1.3.3a　2019年每月馬祖海域 Y 站與 C 站風速比較圖

W18CMSY0.1HA W18CMSC0.1H0 W191MSY0.1HA W191MSC0.1H0 W192MSY0.1HA W192MSC0.1H0
W193MSY0.1HA W193MSC0.1H0 W194MSY0.1HA W194MSC0.1H0 W195MSY0.1HA W195MSC0.1H0

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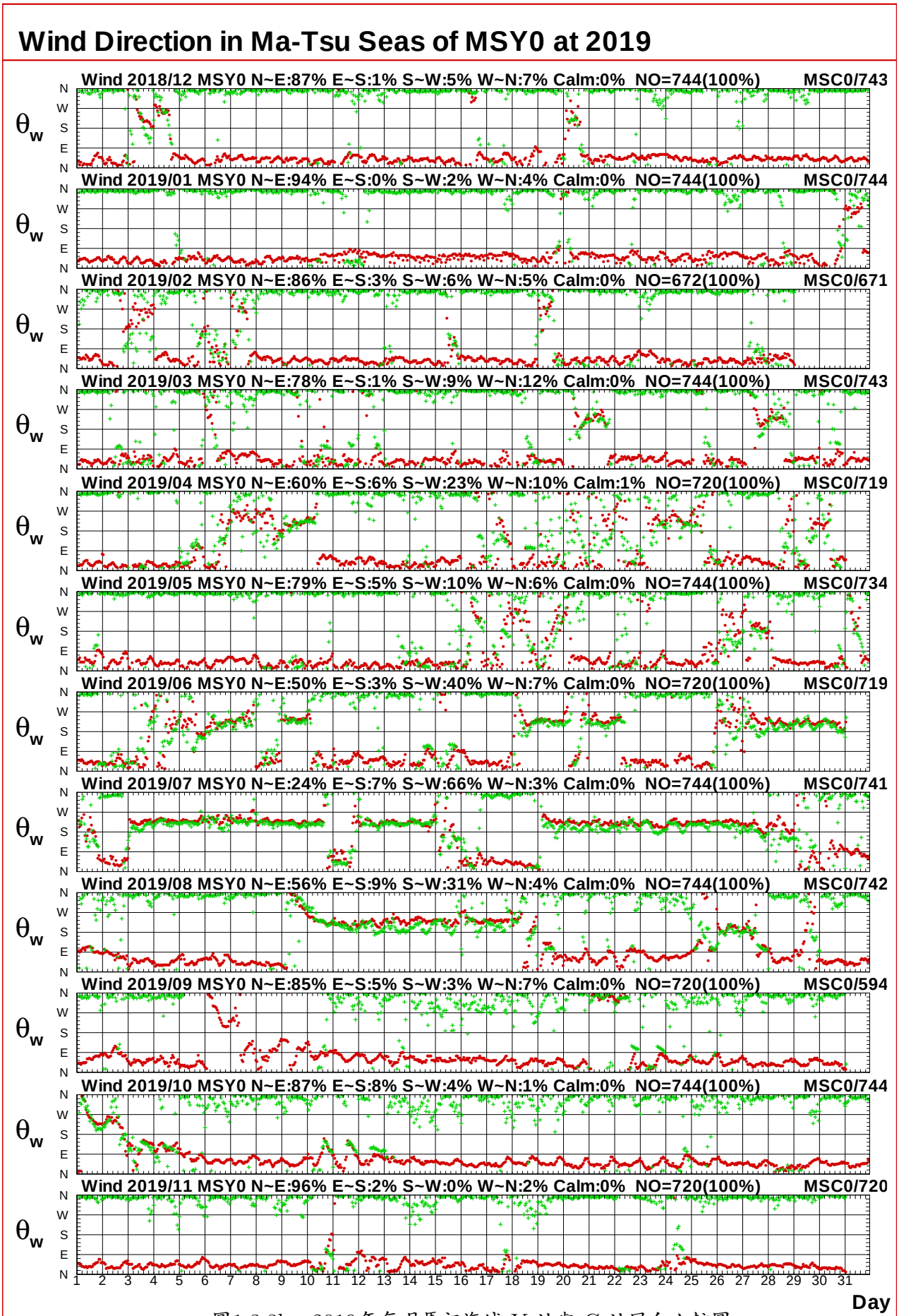


圖1.3.3b　2019年每月馬祖海域 Y 站與 C 站風向比較圖

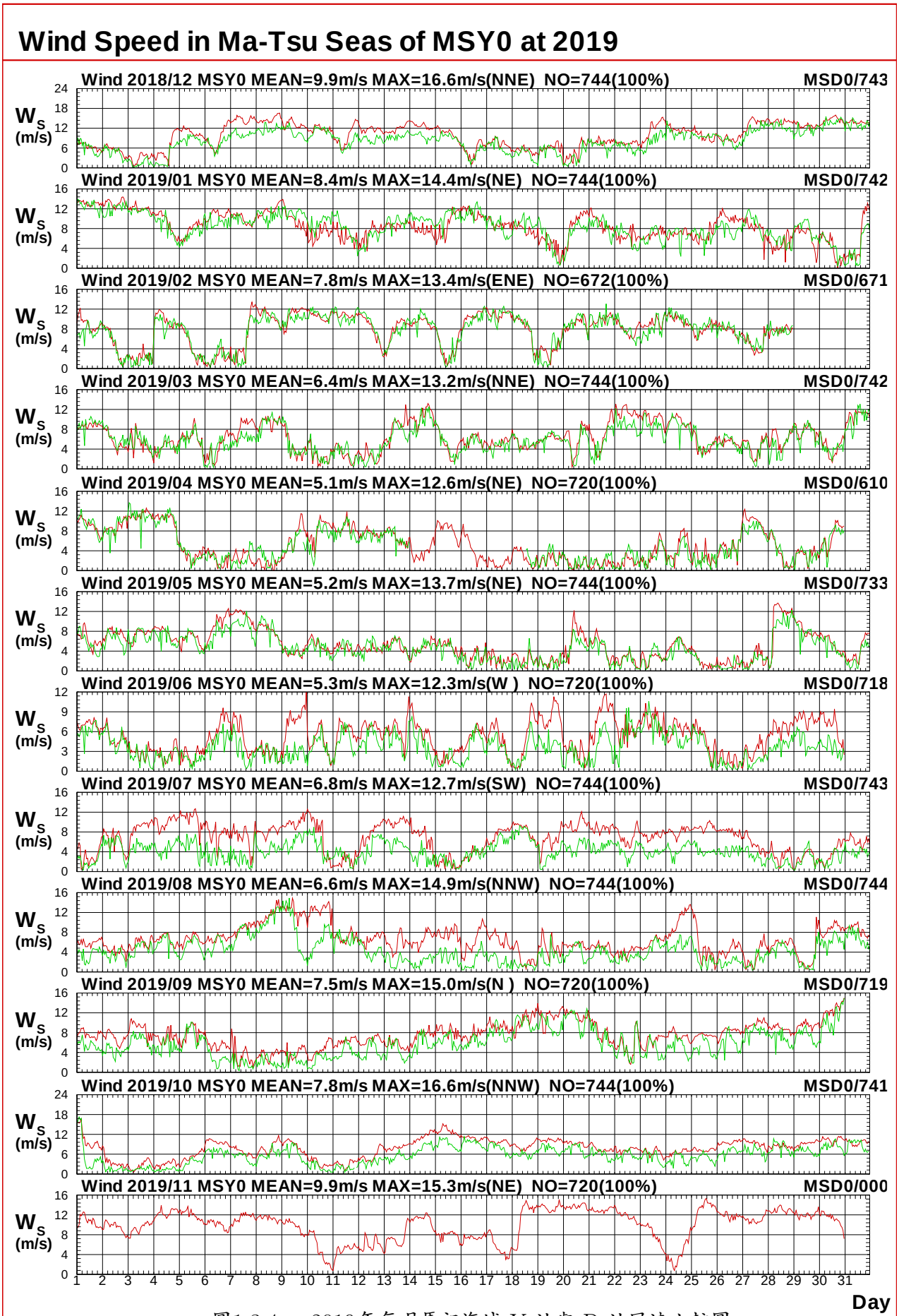


圖1.3.4a　2019年每月馬祖海域 Y 站與 D 站風速比較圖

W18CMSY0.1HA W18CMSD0.1H0 W191MSY0.1HA W191MSD0.1H0 W192MSY0.1HA W192MSD0.1H0
W193MSY0.1HA W193MSD0.1H0 W194MSY0.1HA W194MSD0.1H0 W195MSY0.1HA W195MSD0.1H0

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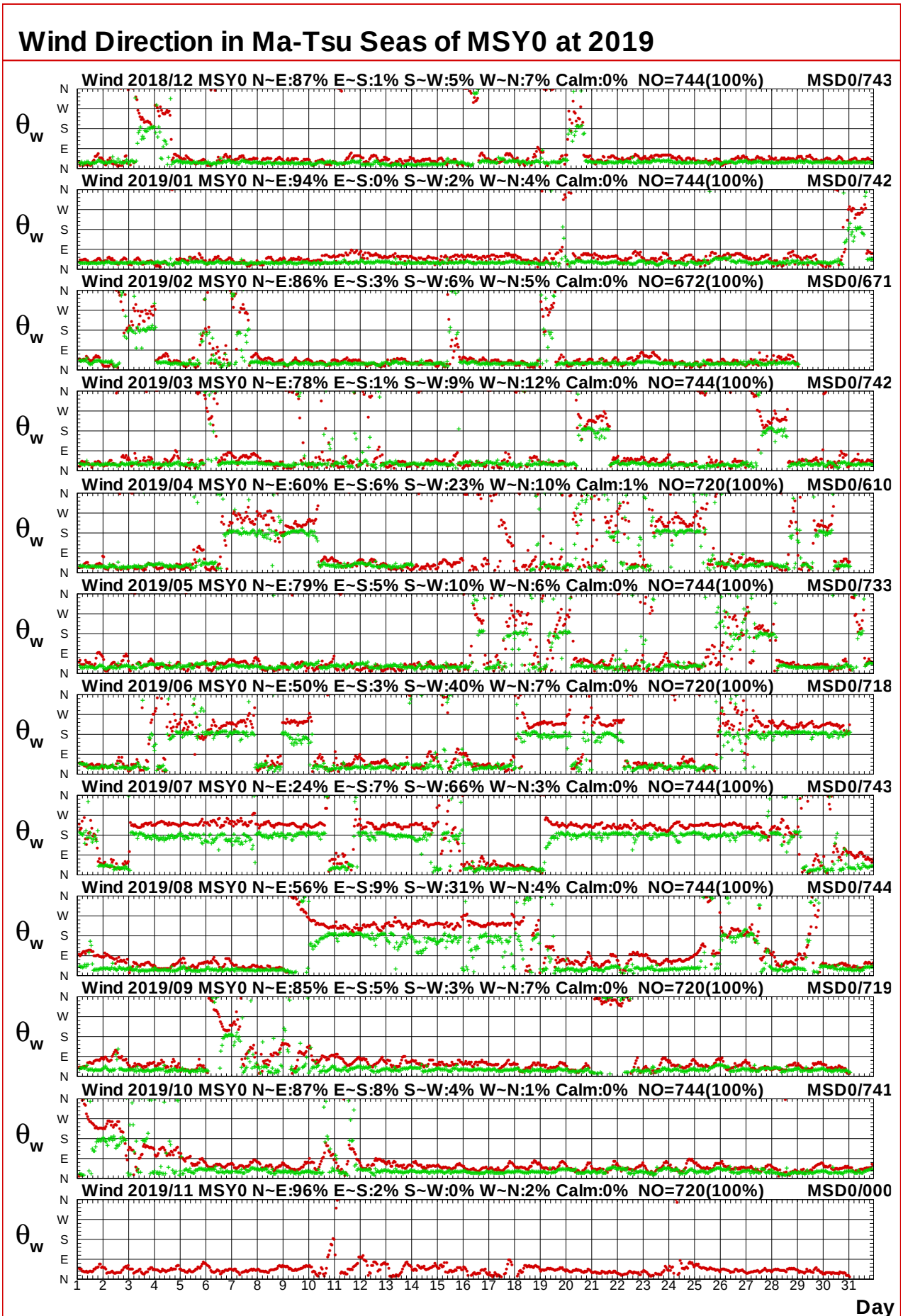


圖1.3.4b　2019年每月馬祖海域 Y 站與 D 站風向比較圖

Wind Speed in Ma-Tsu Seas of MSY0 at 2019

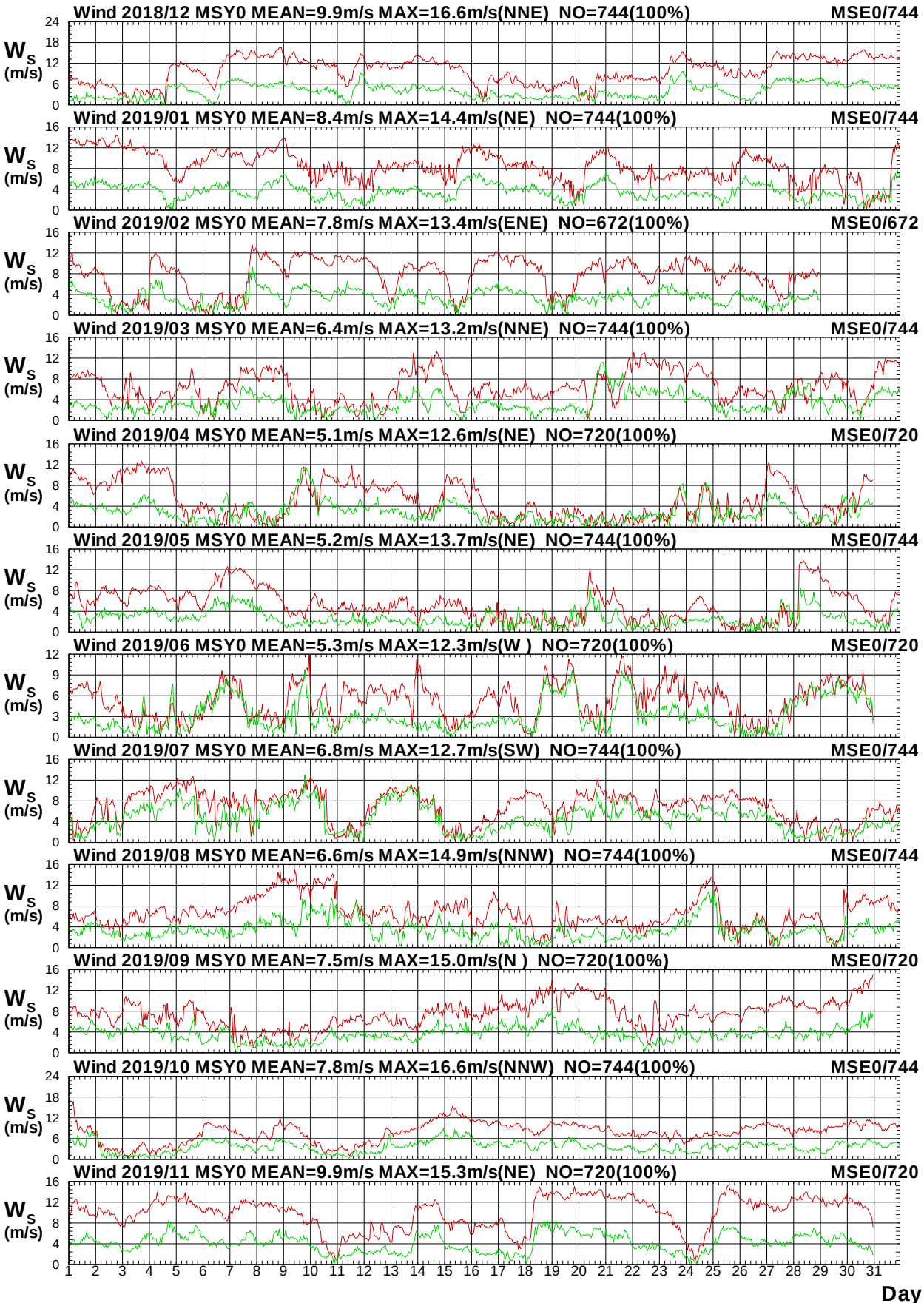


圖1.3.5a　2019年每月馬祖海域 Y 站與 E 站風速比較圖

W18CMSY0.1HA W18CMSE0.1H0 W191MSY0.1HA W191MSE0.1H0 W192MSY0.1HA W192MSE0.1H0
W193MSY0.1HA W193MSE0.1H0 W194MSY0.1HA W194MSE0.1H0 W195MSY0.1HA W195MSE0.1H0

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Wind Direction in Ma-Tsu Seas of MSY0 at 2019

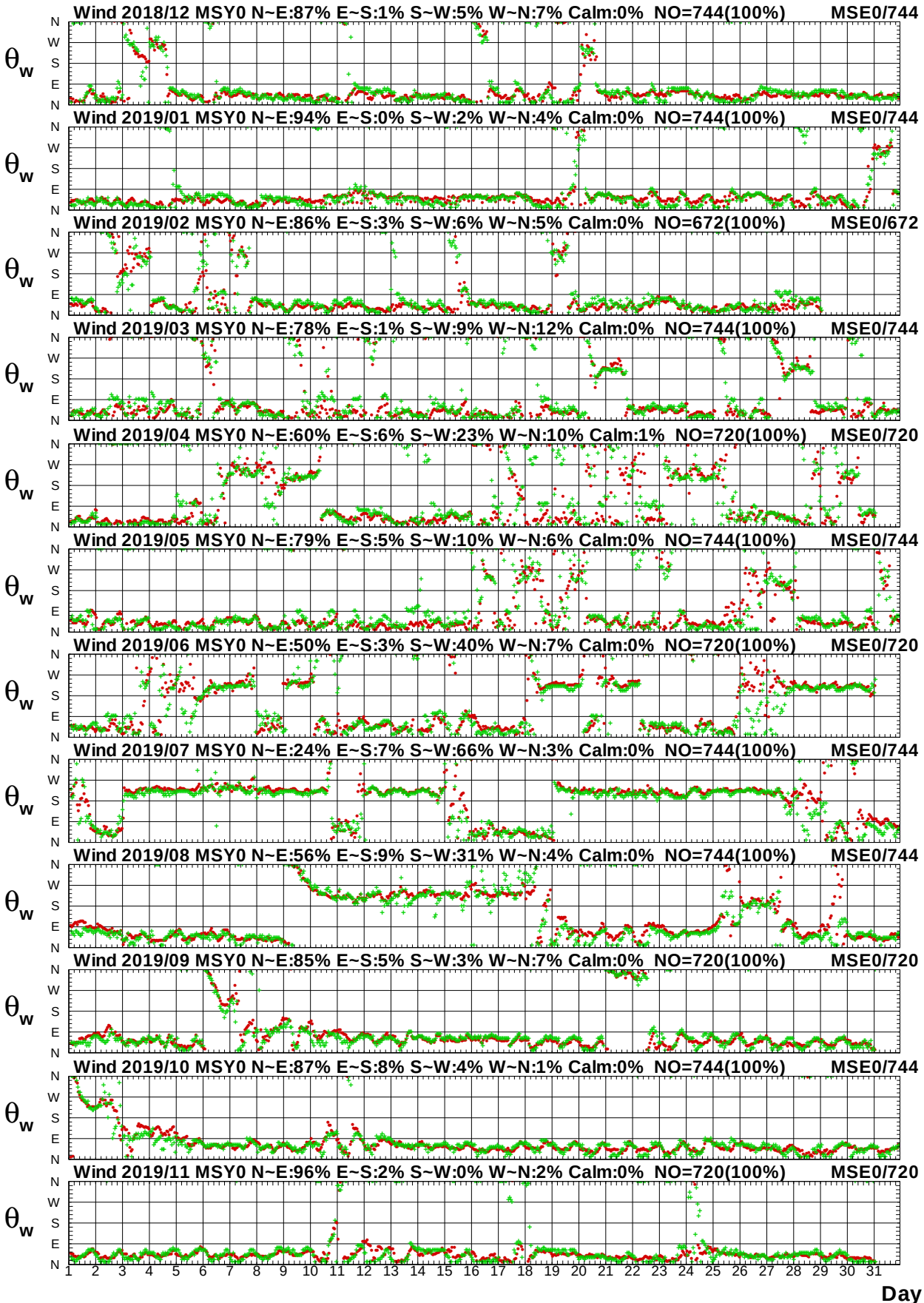


圖1.3.5b　2019年每月馬祖海域 Y 站與 E 站風向比較圖

Wind Speed in Ma-Tsu Seas of MSY0 at 2019

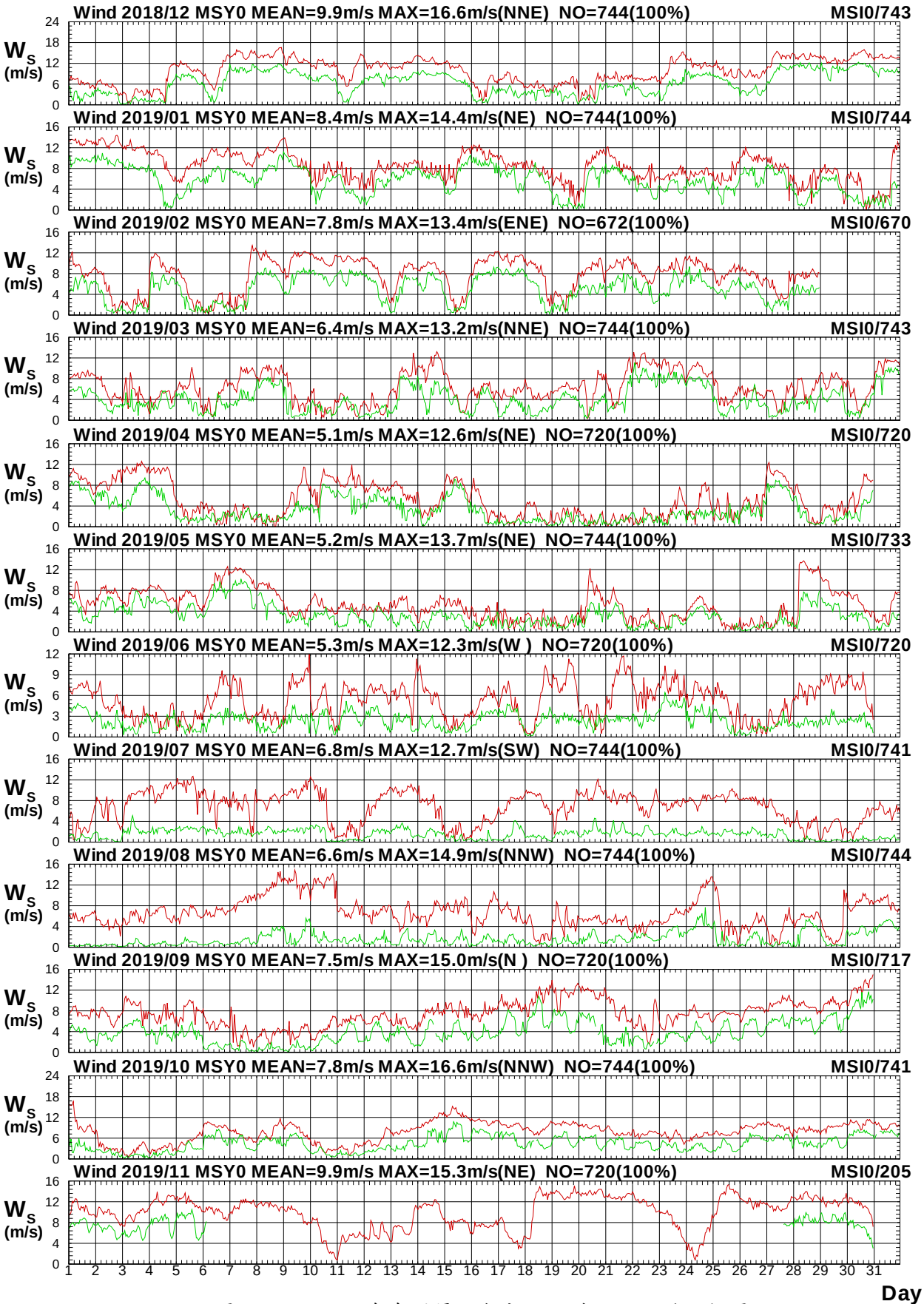


圖1.3.6a　2019年每月馬祖海域 Y 站與 I 站風速比較圖

W18CMSY0.1HA W18CMSI0.1H0 W191MSY0.1HA W191MSI0.1H0 W192MSY0.1HA W192MSI0.1H0
W193MSY0.1HA W193MSI0.1H0 W194MSY0.1HA W194MSI0.1H0 W195MSY0.1HA W195MSI0.1H0

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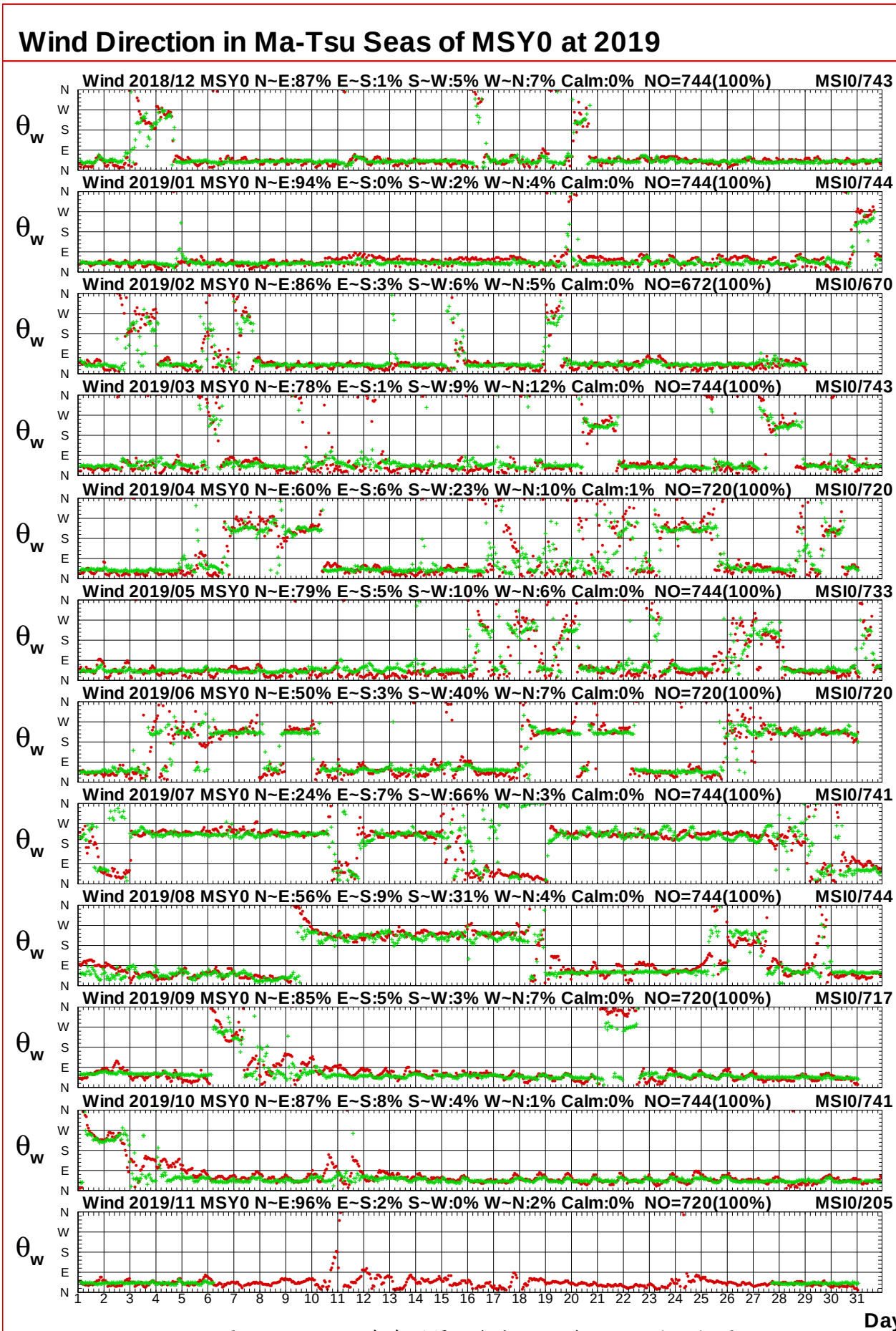


圖1.3.6b　2019年每月馬祖海域 Y 站與 I 站風向比較圖

Wind Speed in Ma-Tsu Seas of MSY0 at 2019

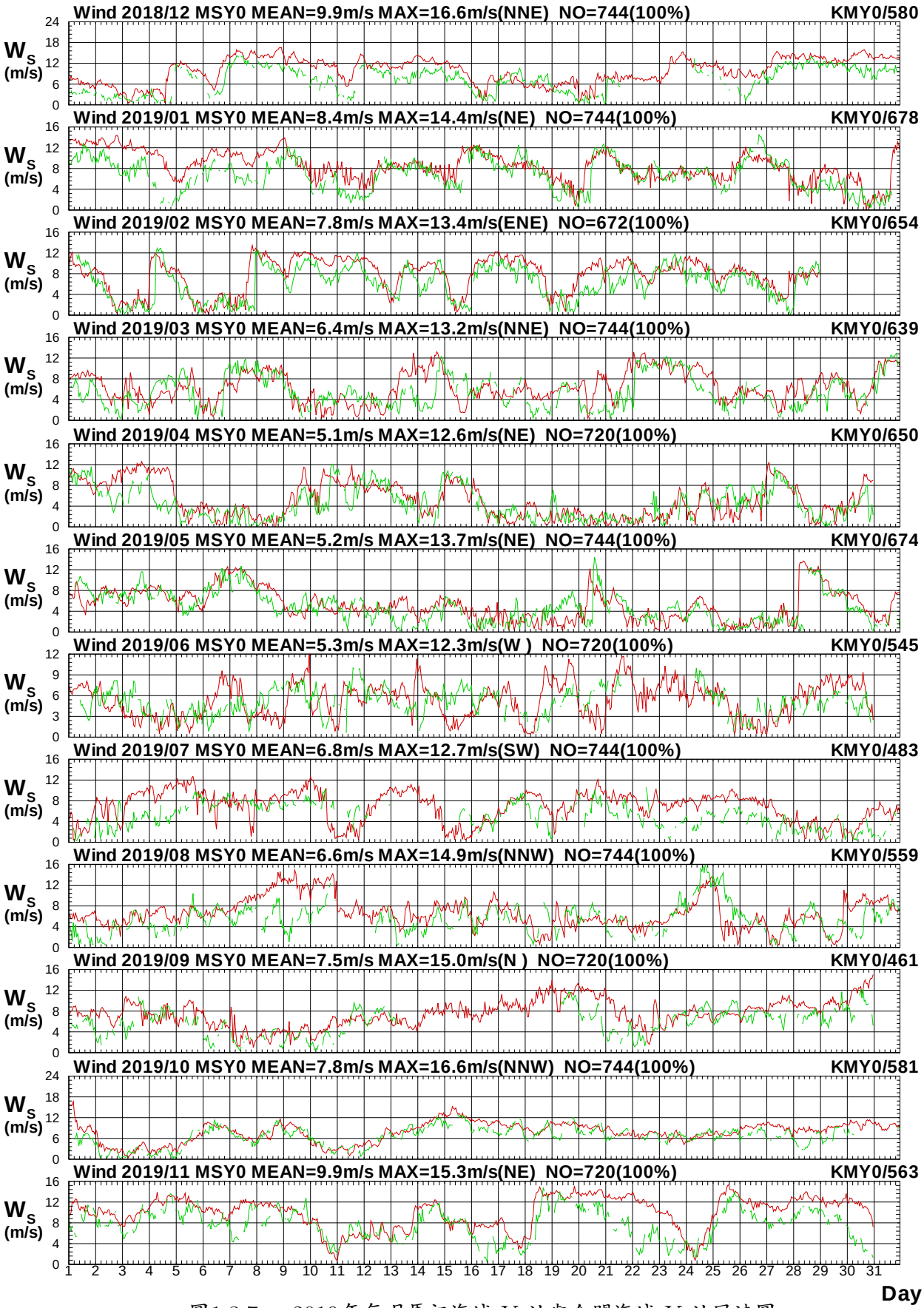


圖1.3.7a　2019年每月馬祖海域 Y 站與金門海域 Y 站風速圖

W18CMSY0.1HA W18CKMY0.1H0 W191MSY0.1HA W191KMY0.1H0 W192MSY0.1HA W192KMY0.1H0
W193MSY0.1HA W193KMY0.1H0 W194MSY0.1HA W194KMY0.1H0 W195MSY0.1HA W195KMY0.1H0

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Wind Direction in Ma-Tsu Seas of MSY0 at 2019

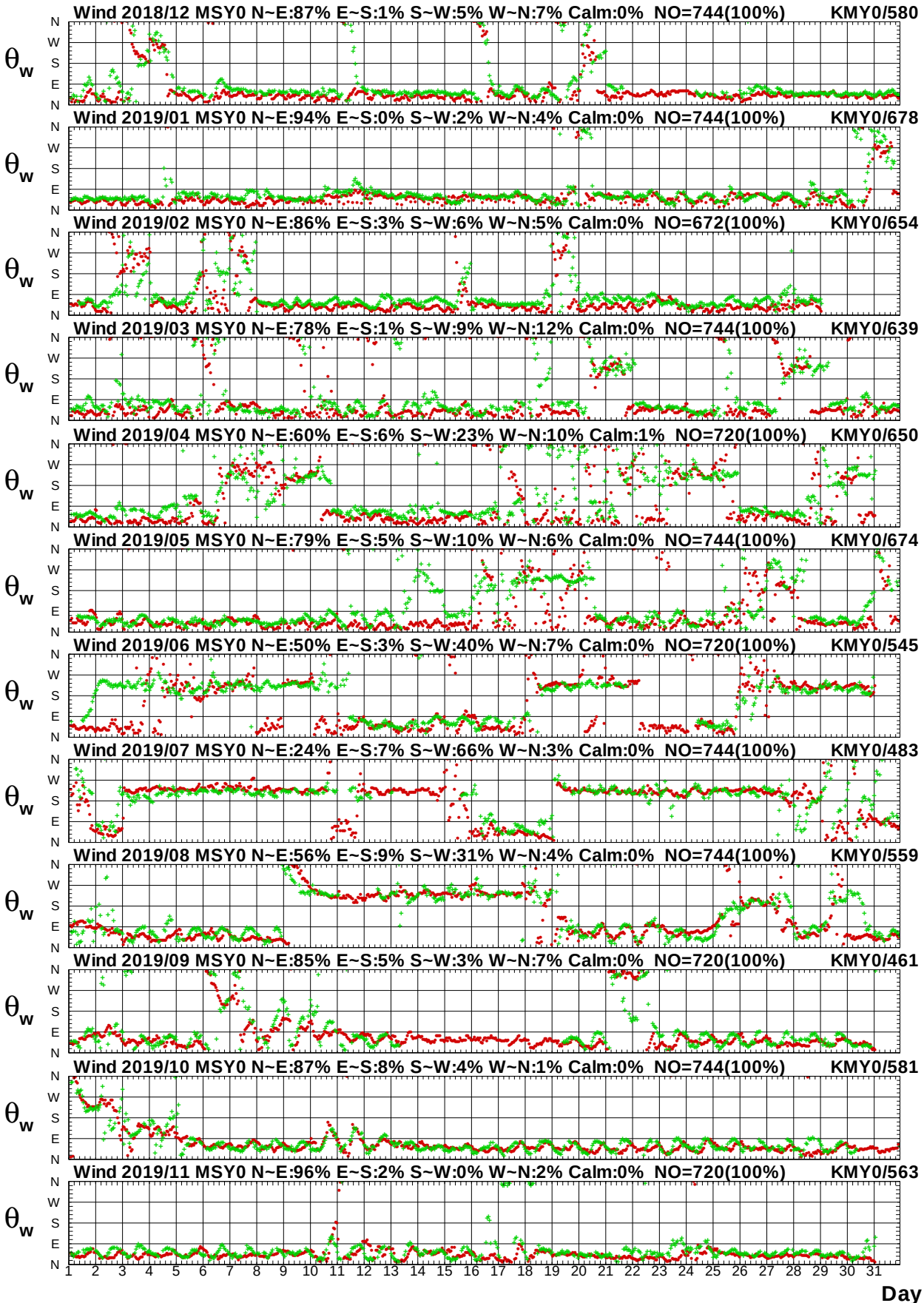


圖1.3.7b　2019年每月馬祖海域 Y 站與金門海域 Y 站風向圖

Wind Speed in Ma-Tsu Seas of MSY0 at 2019

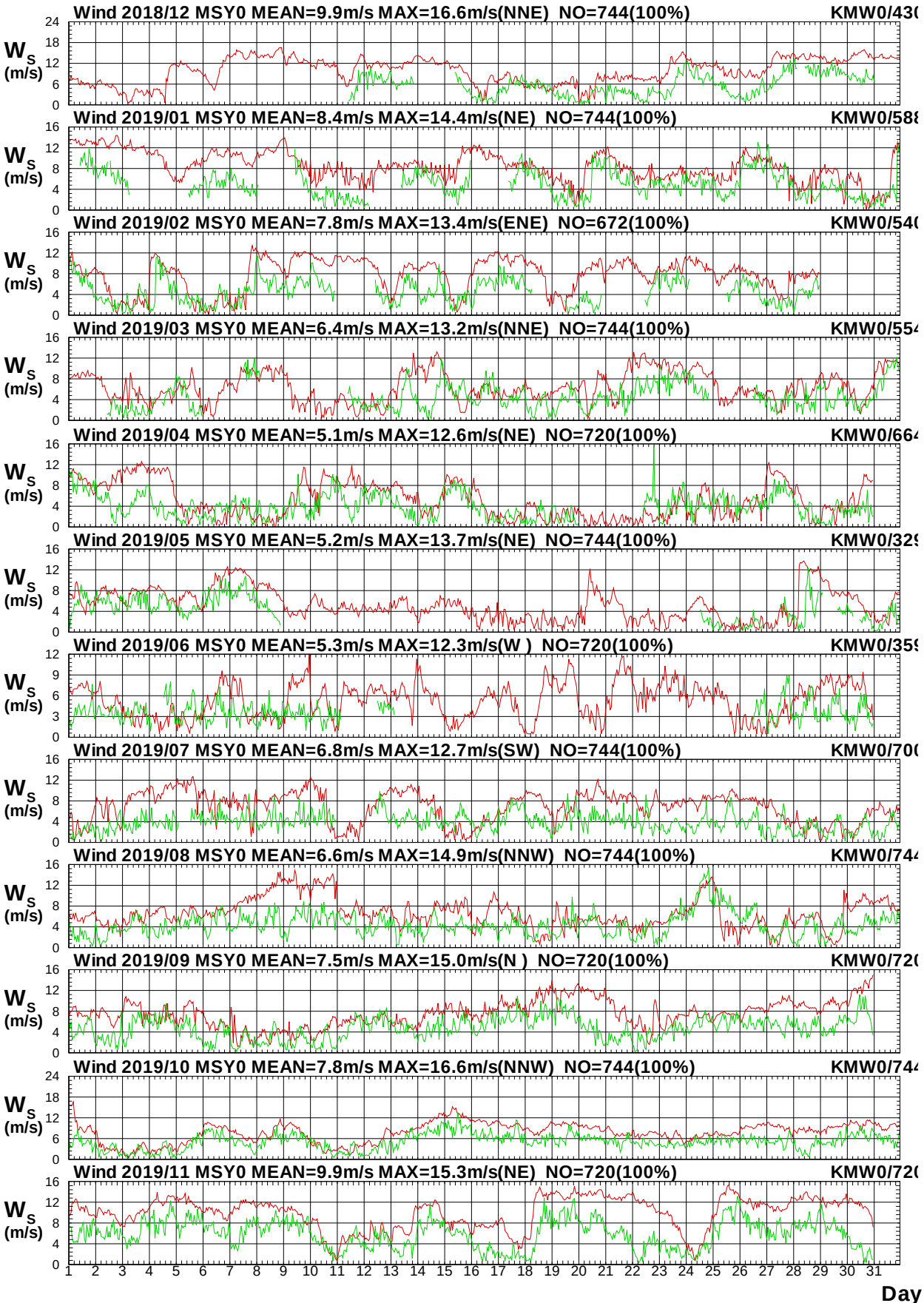


圖1.3.8a　2019年每月馬祖海域 Y 站與金門海域 W 站風速圖

W18CMSY0.1HA W18CKMW0.1H0 W191MSY0.1HA W191KMW0.1H0 W192MSY0.1HA W192KMW0.1H0
W193MSY0.1HA W193KMW0.1H0 W194MSY0.1HA W194KMW0.1H0 W195MSY0.1HA W195KMW0.1H0

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Wind Direction in Ma-Tsu Seas of MSY0 at 2019

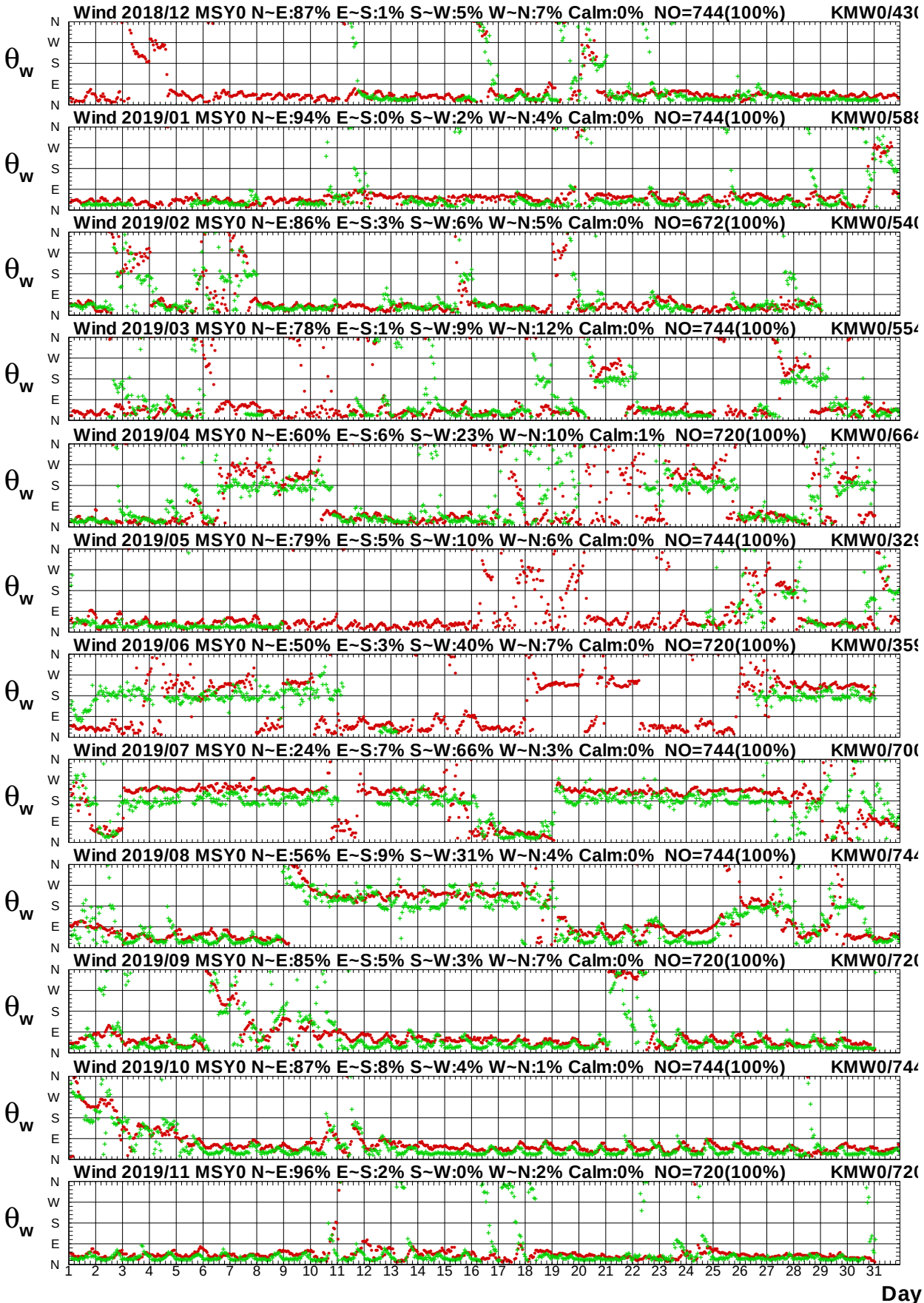


圖1.3.8b　2019年每月馬祖海域 Y 站與金門海域 W 站風向圖

Wind Speed in Ma-Tsu Seas of MSY0 at 2019

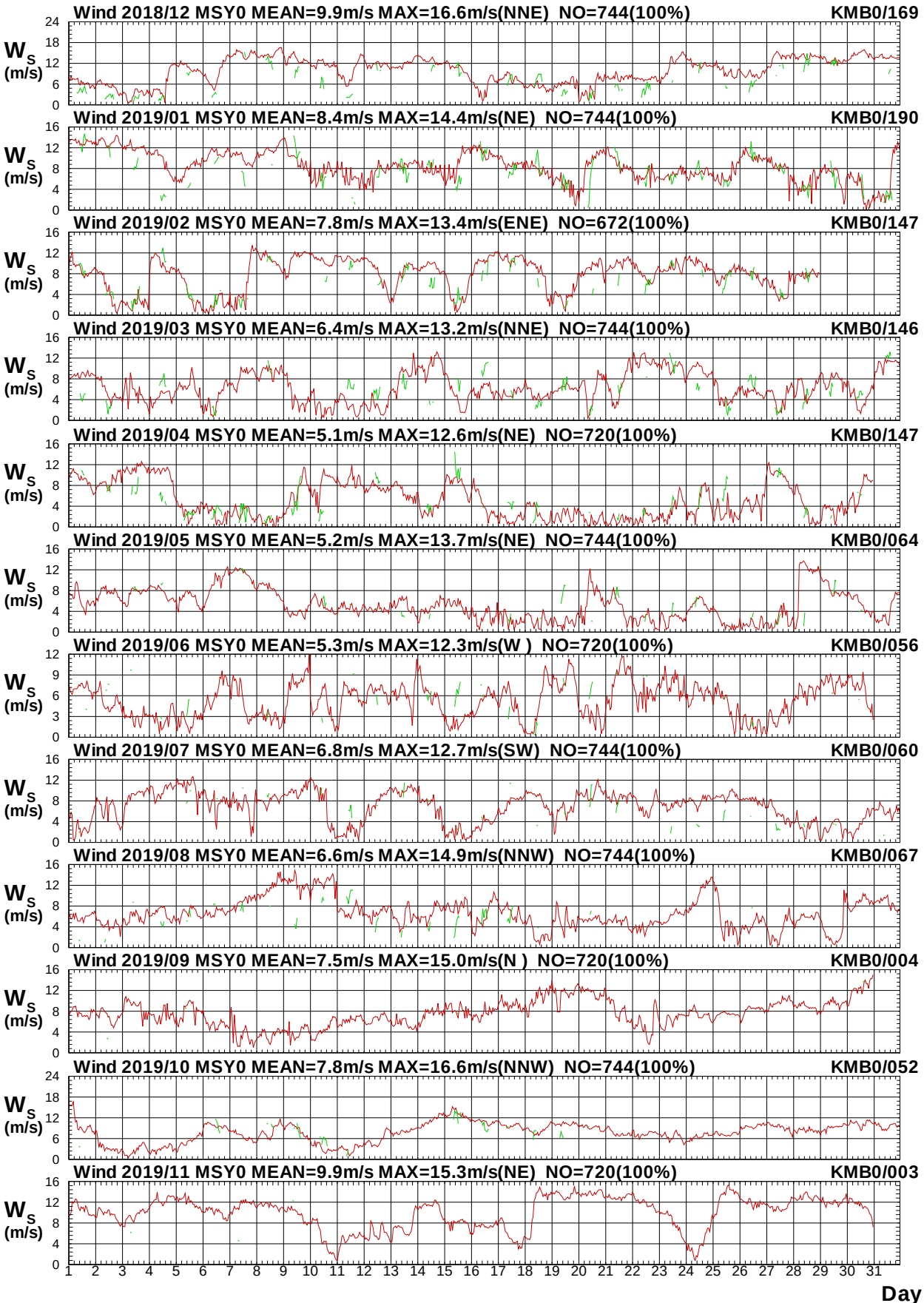


圖1.3.9a　2019年每月馬祖海域 Y 站與金門海域 B 站風速圖

W18CMSY0.1HA W18CKMB0.1H0 W191MSY0.1HA W191KMB0.1H0 W192MSY0.1HA W192KMB0.1H0
W193MSY0.1HA W193KMB0.1H0 W194MSY0.1HA W194KMB0.1H0 W195MSY0.1HA W195KMB0.1H0

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Wind Direction in Ma-Tsu Seas of MSY0 at 2019

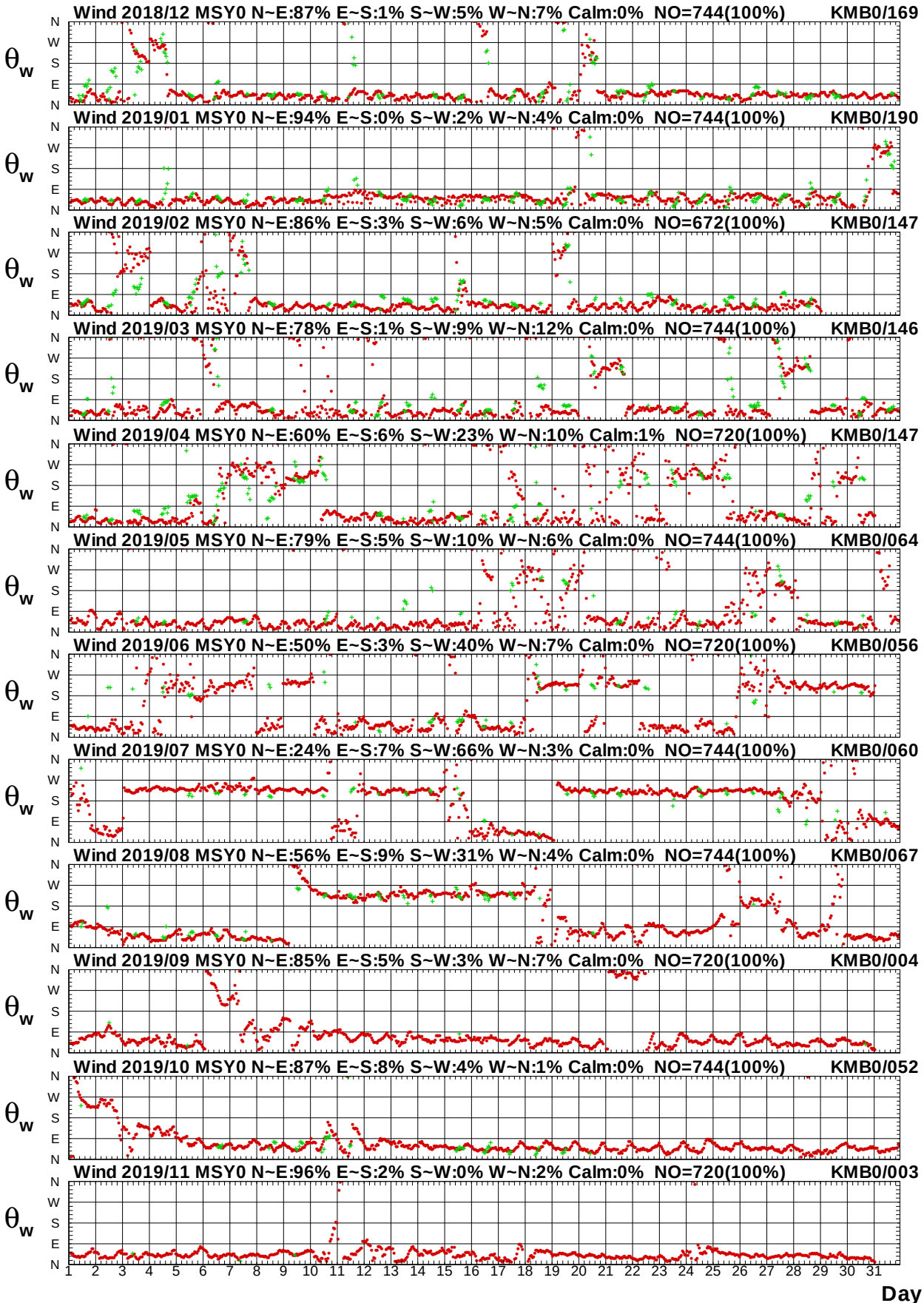


圖1.3.9b　2019年每月馬祖海域 Y 站與金門海域 B 站風向圖

W18CMSY0.1HA W18CKMB0.1H0 W191MSY0.1HA W191KMB0.1H0 W192MSY0.1HA W192KMB0.1H0
W193MSY0.1HA W193KMB0.1H0 W194MSY0.1HA W194KMB0.1H0 W195MSY0.1HA W195KMB0.1H0

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Wind Speed in Ma-Tsu Seas of MSY0 at 2019

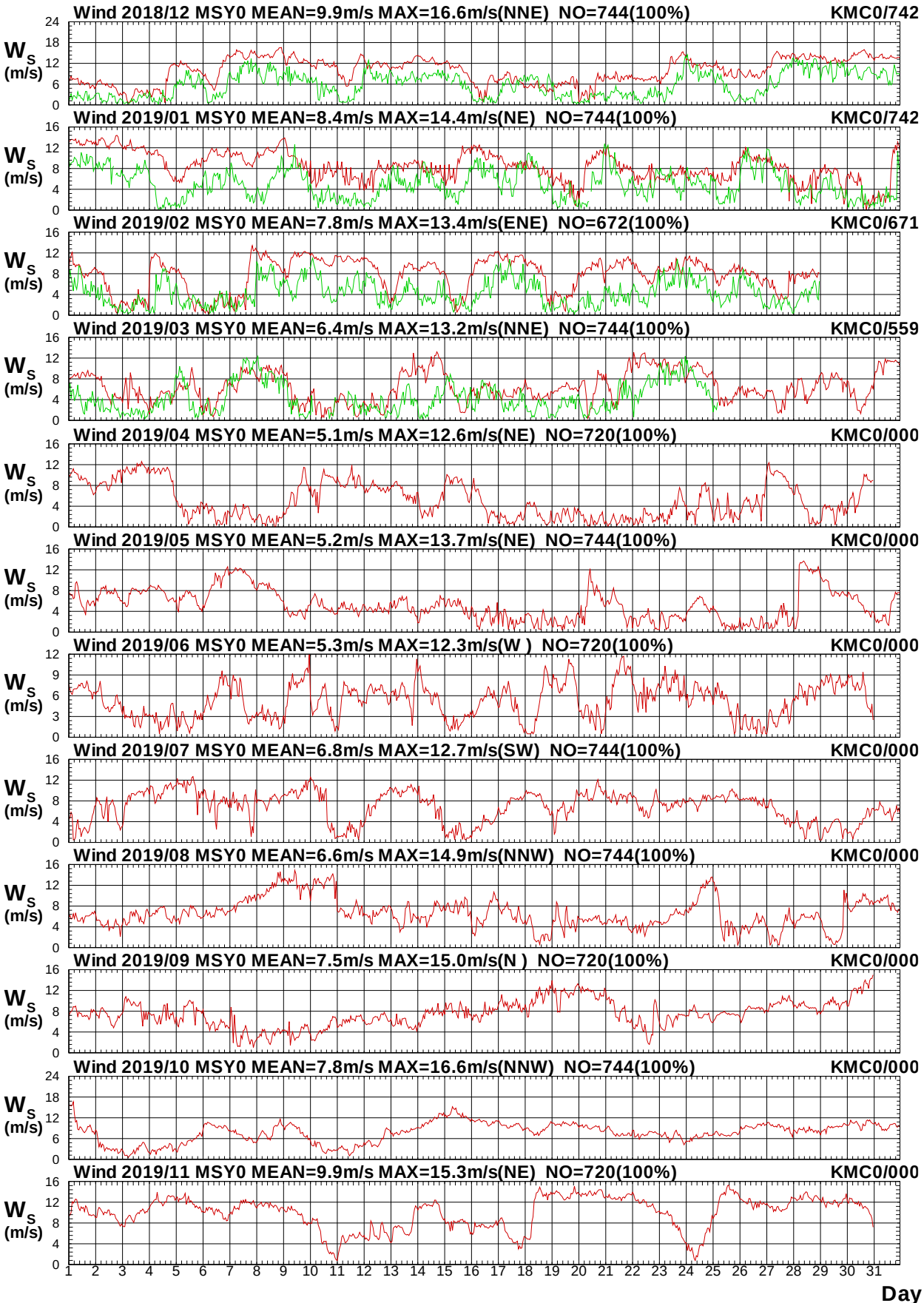


圖1.3.10a　2019年每月馬祖海域 Y 站與金門海域 C 站風速圖

W18CMSY0.1HA W18CKMC0.1H0 W191MSY0.1HA W191KMC0.1H0 W192MSY0.1HA W192KMC0.1H0
W193MSY0.1HA W193KMC0.1H0 W194MSY0.1HA W194KMC0.1H0 W195MSY0.1HA W195KMC0.1H0

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Wind Direction in Ma-Tsu Seas of MSY0 at 2019

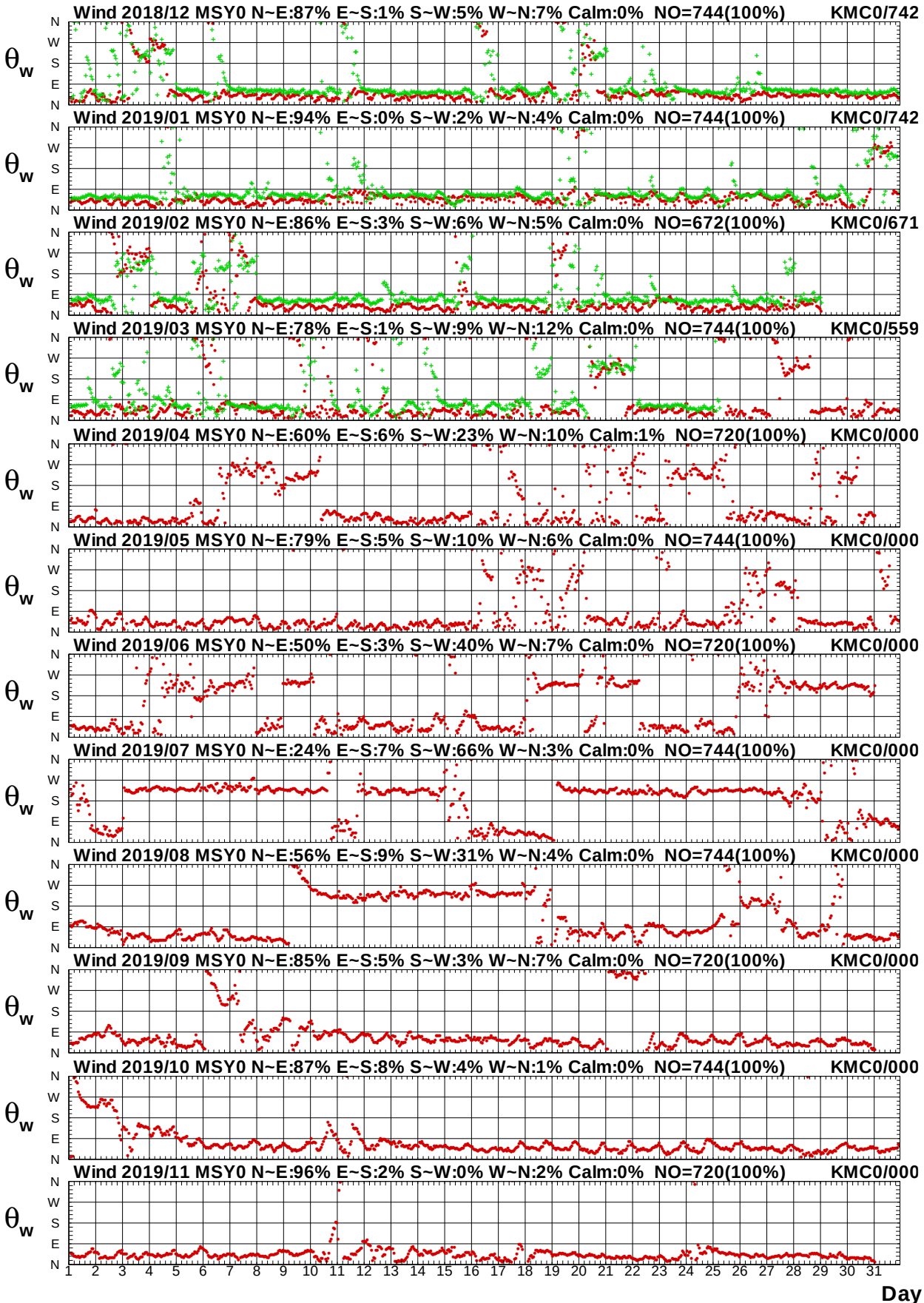


圖1.3.10b　2019年每月馬祖海域 Y 站與金門海域 C 站風向圖

Wind Speed in Ma-Tsu Seas of MSY0 at 2019

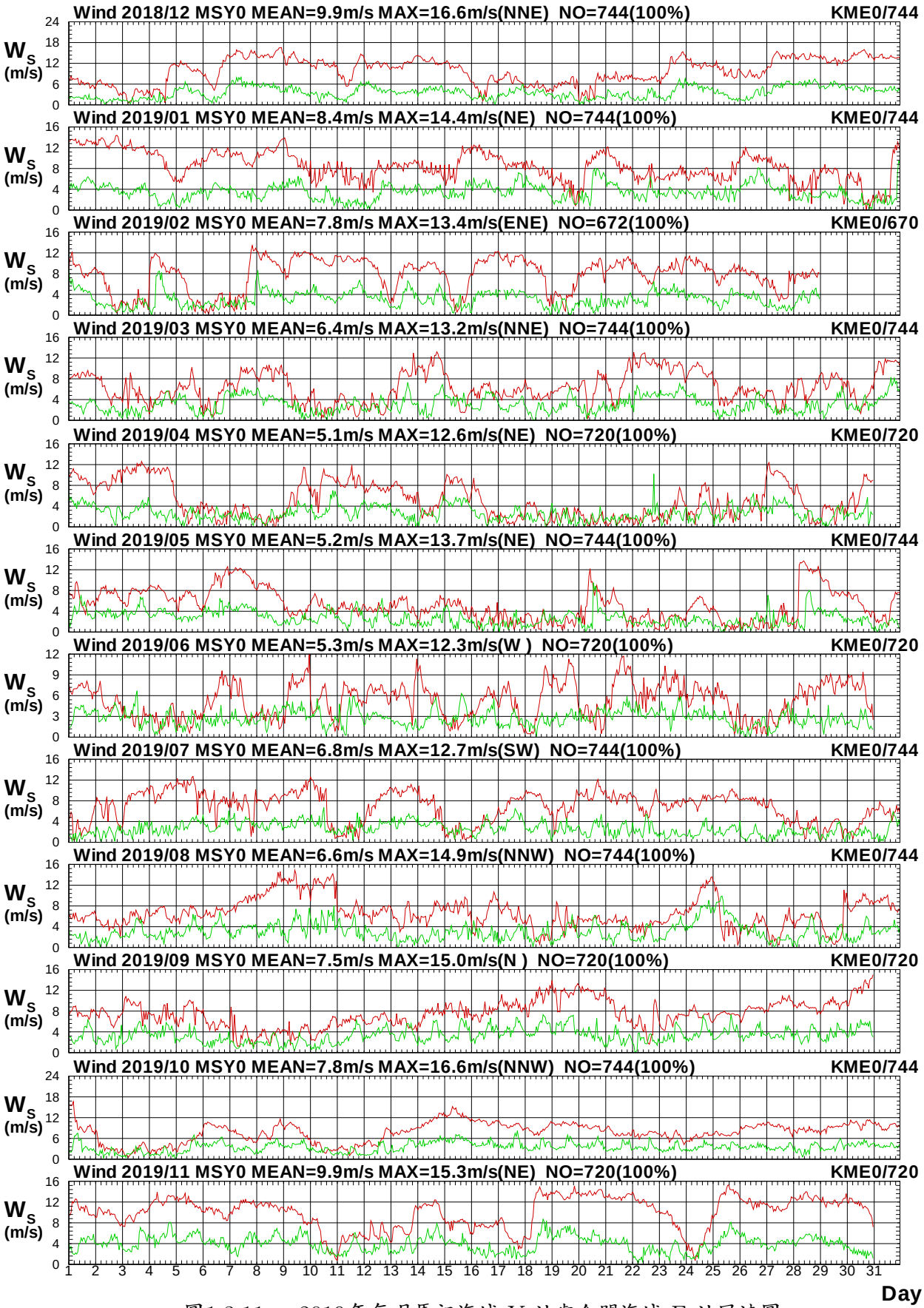


圖1.3.11a　2019年每月馬祖海域 Y 站與金門海域 E 站風速圖

W18CMSY0.1HA W18CKME0.1H0 W191MSY0.1HA W191KME0.1H0 W192MSY0.1HA W192KME0.1H0
W193MSY0.1HA W193KME0.1H0 W194MSY0.1HA W194KME0.1H0 W195MSY0.1HA W195KME0.1H0

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Wind Direction in Ma-Tsu Seas of MSY0 at 2019

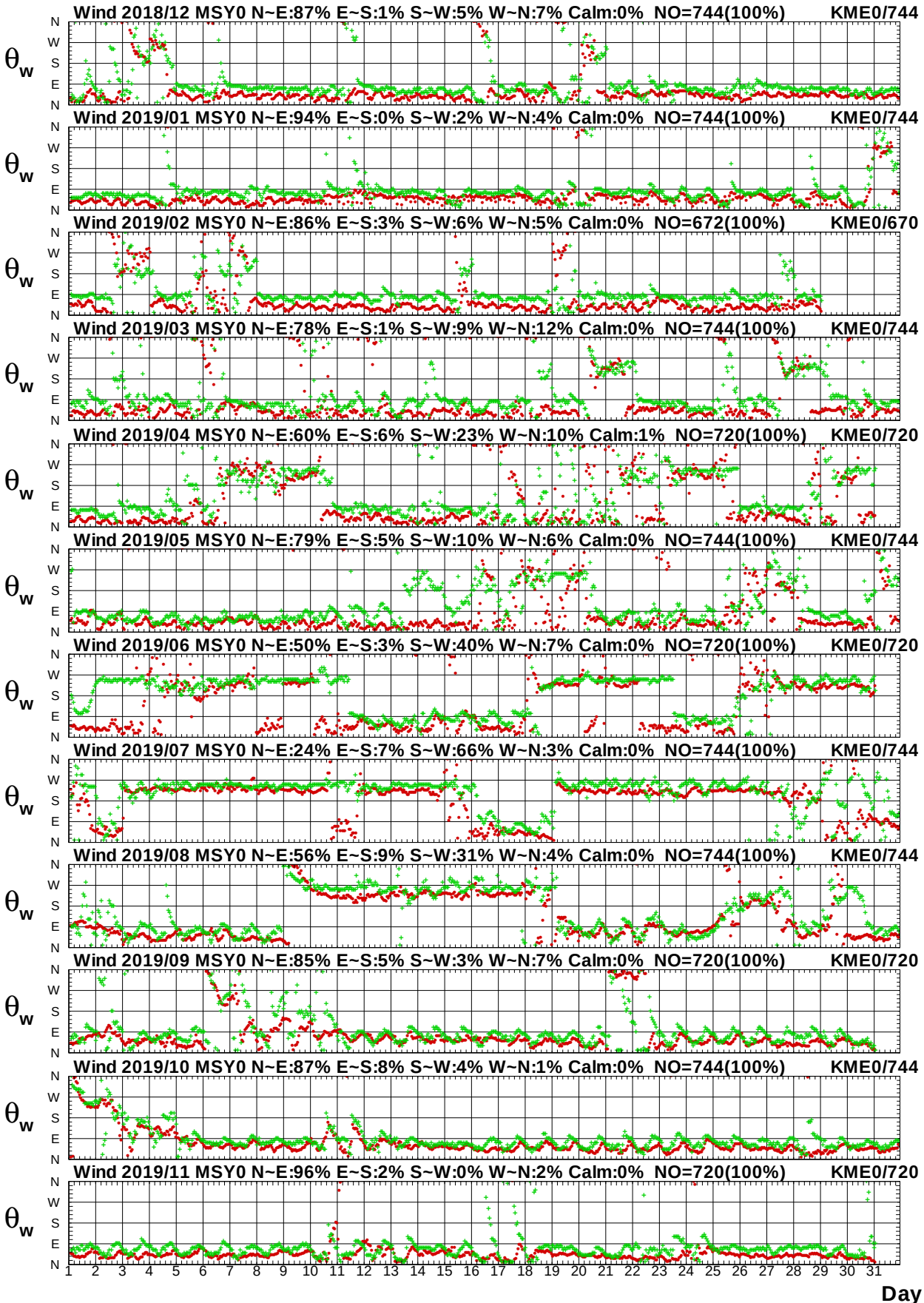


圖1.3.11b　2019年每月馬祖海域 Y 站與金門海域 E 站風向圖

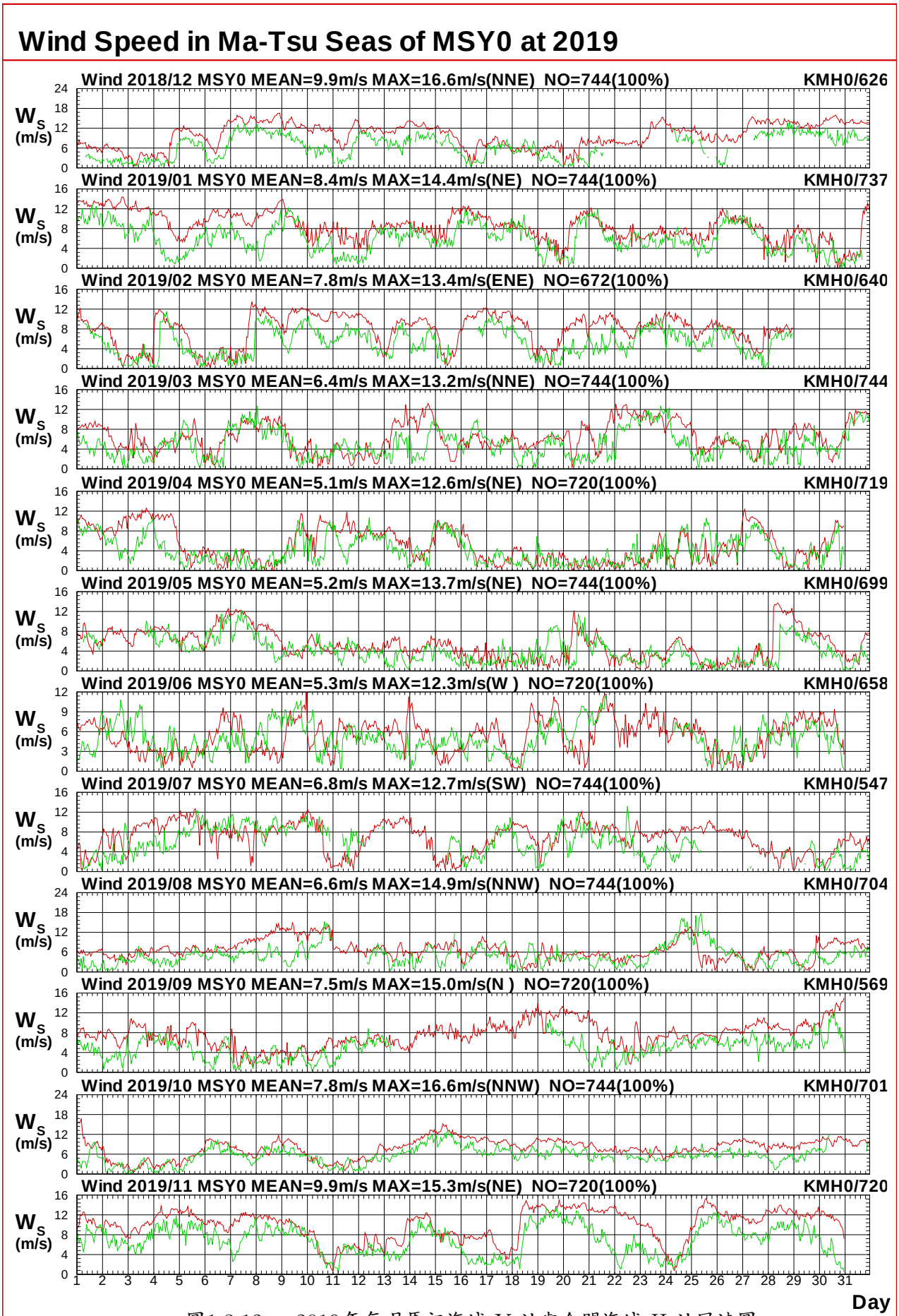


圖1.3.12a　2019年每月馬祖海域 Y 站與金門海域 H 站風速圖

W18CMSY0.1HA W18CKMH0.1H0 W191MSY0.1HA W191KMH0.1H0 W192MSY0.1HA W192KMH0.1H0
W193MSY0.1HA W193KMH0.1H0 W194MSY0.1HA W194KMH0.1H0 W195MSY0.1HA W195KMH0.1H0

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Wind Direction in Ma-Tsu Seas of MSY0 at 2019

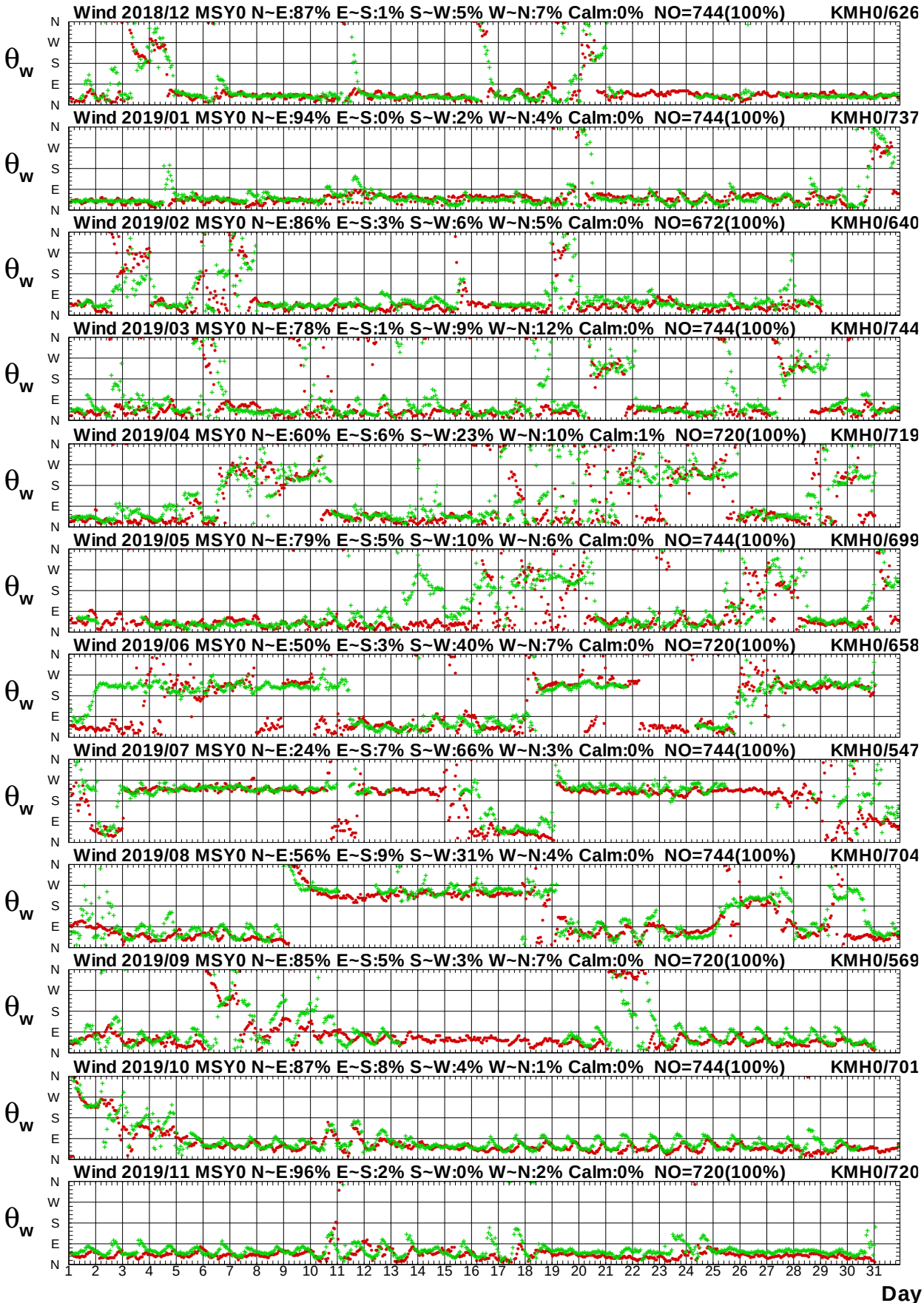


圖1.3.12b　2019年每月馬祖海域 Y 站與金門海域 H 站風向圖

Wind Speed in Ma-Tsu Seas of MSY0 at 2019

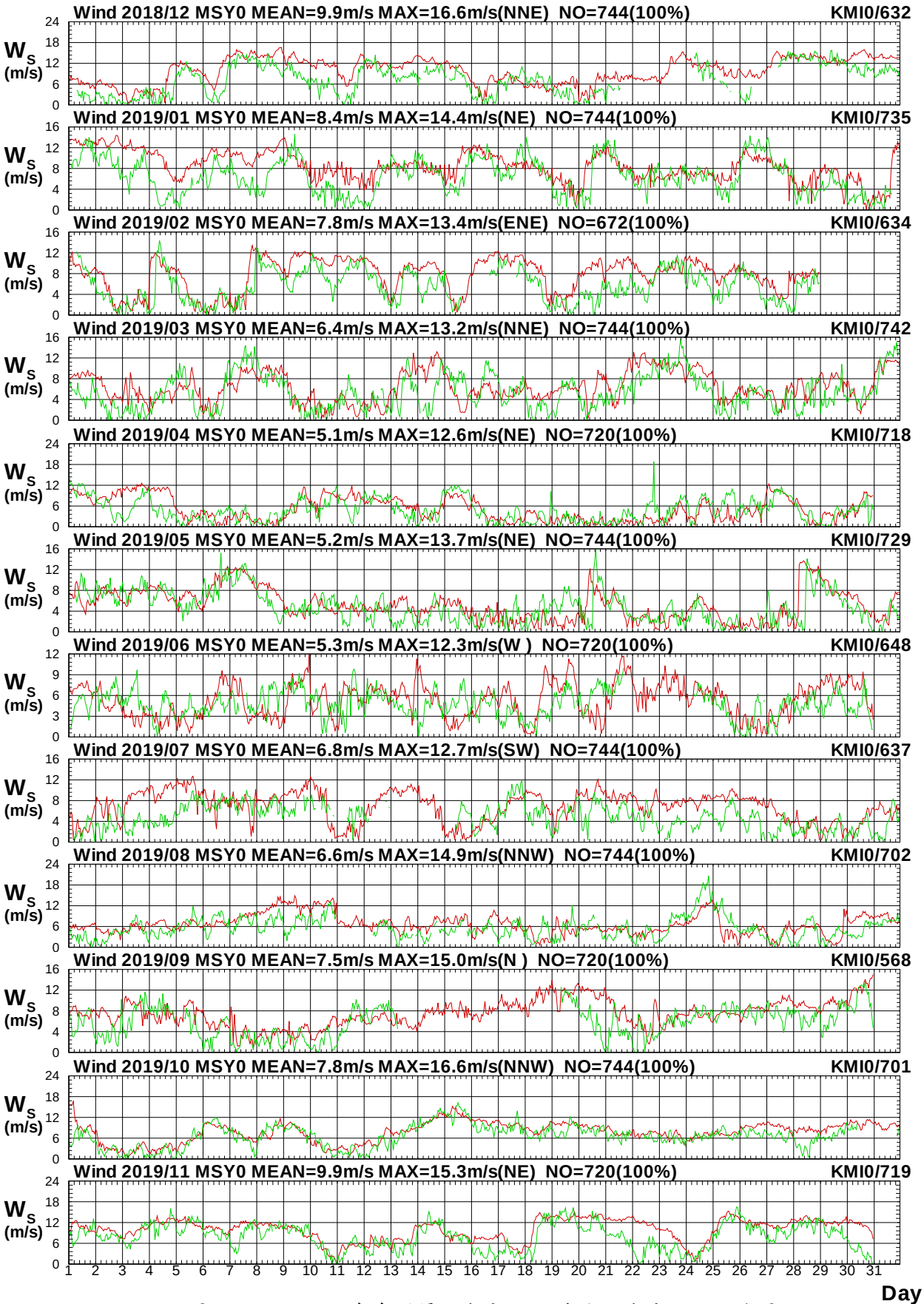


圖1.3.13a　2019年每月馬祖海域 Y 站與金門海域 I 站風速圖

W18CMSY0.1HA W18CKMI0.1H0 W191MSY0.1HA W191KMI0.1H0 W192MSY0.1HA W192KMI0.1H0
W193MSY0.1HA W193KMI0.1H0 W194MSY0.1HA W194KMI0.1H0 W195MSY0.1HA W195KMI0.1H0

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Wind Direction in Ma-Tsu Seas of MSY0 at 2019

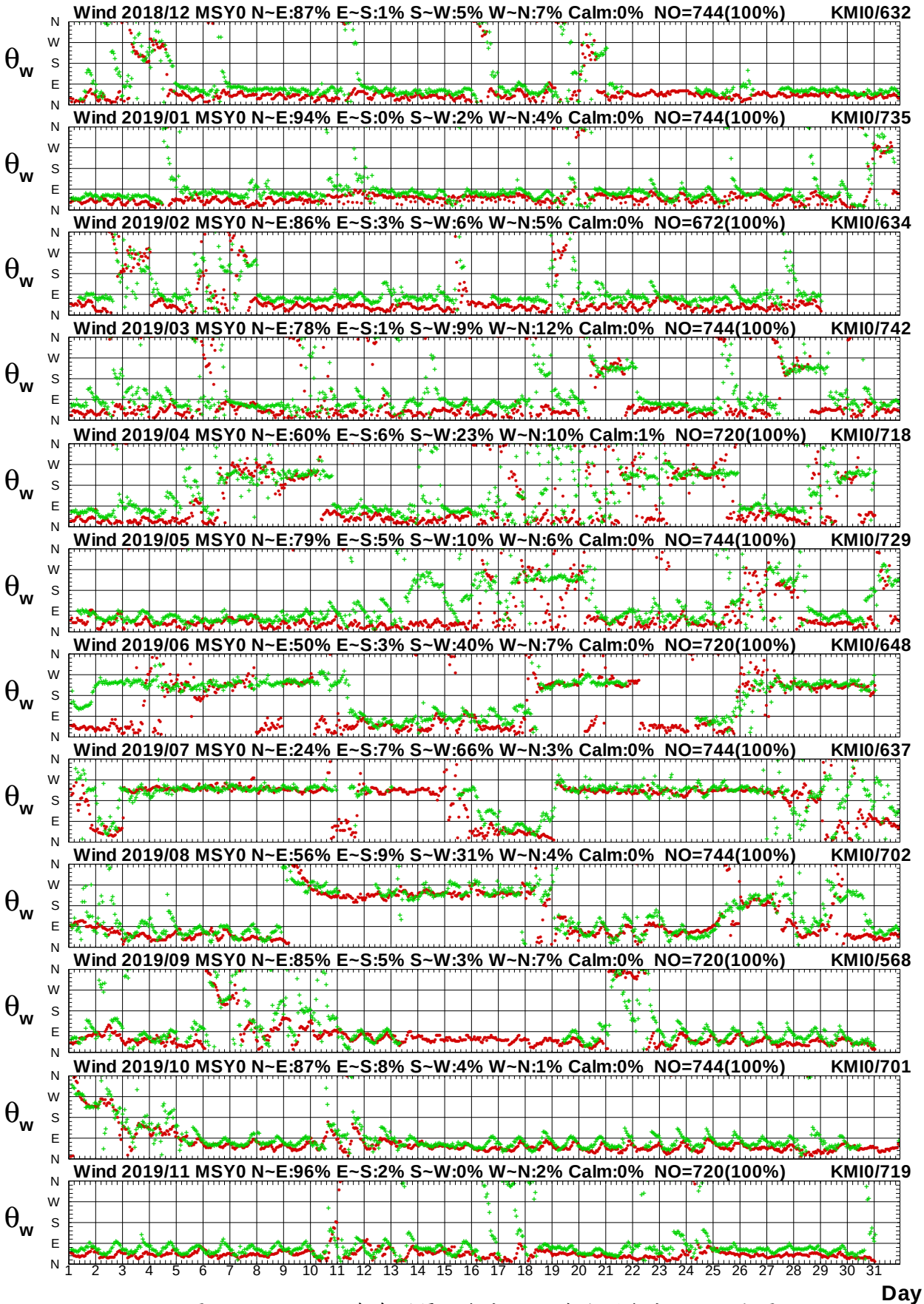


圖1.3.13b　2019年每月馬祖海域 Y 站與金門海域 I 站風向圖

Wind Speed in Ma-Tsu Seas of MSY0 at 2019

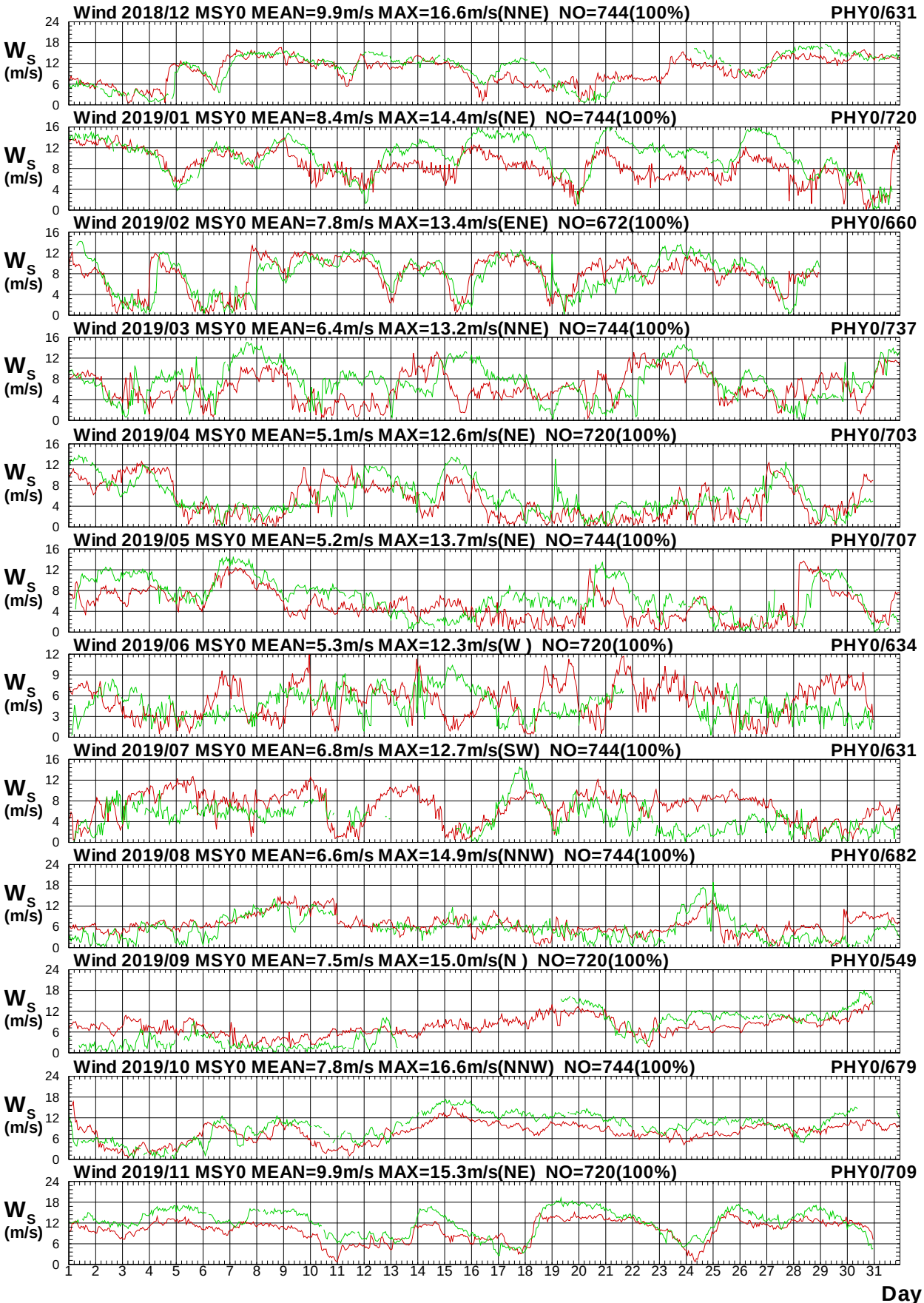


圖1.3.14a　2019年每月馬祖海域 Y 站與澎湖海域 Y 站風速圖

W18CMSY0.1HA W18CPHY0.1H0 W191MSY0.1HA W191PHY0.1H0 W192MSY0.1HA W192PHY0.1H0
W193MSY0.1HA W193PHY0.1H0 W194MSY0.1HA W194PHY0.1H0 W195MSY0.1HA W195PHY0.1H0

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Wind Direction in Ma-Tsu Seas of MSY0 at 2019

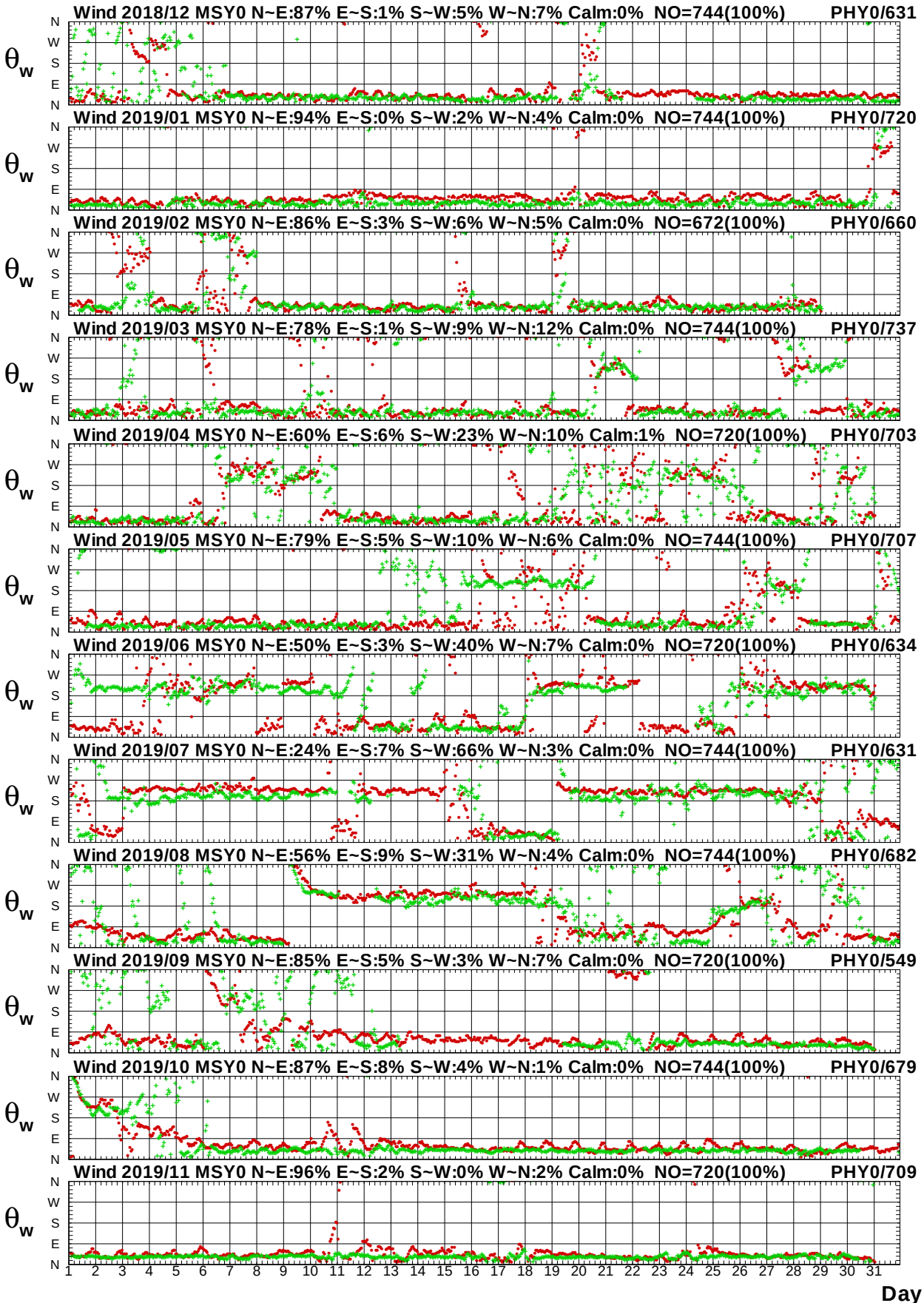


圖1.3.14b　2019年每月馬祖海域 Y 站與澎湖海域 Y 站風向圖

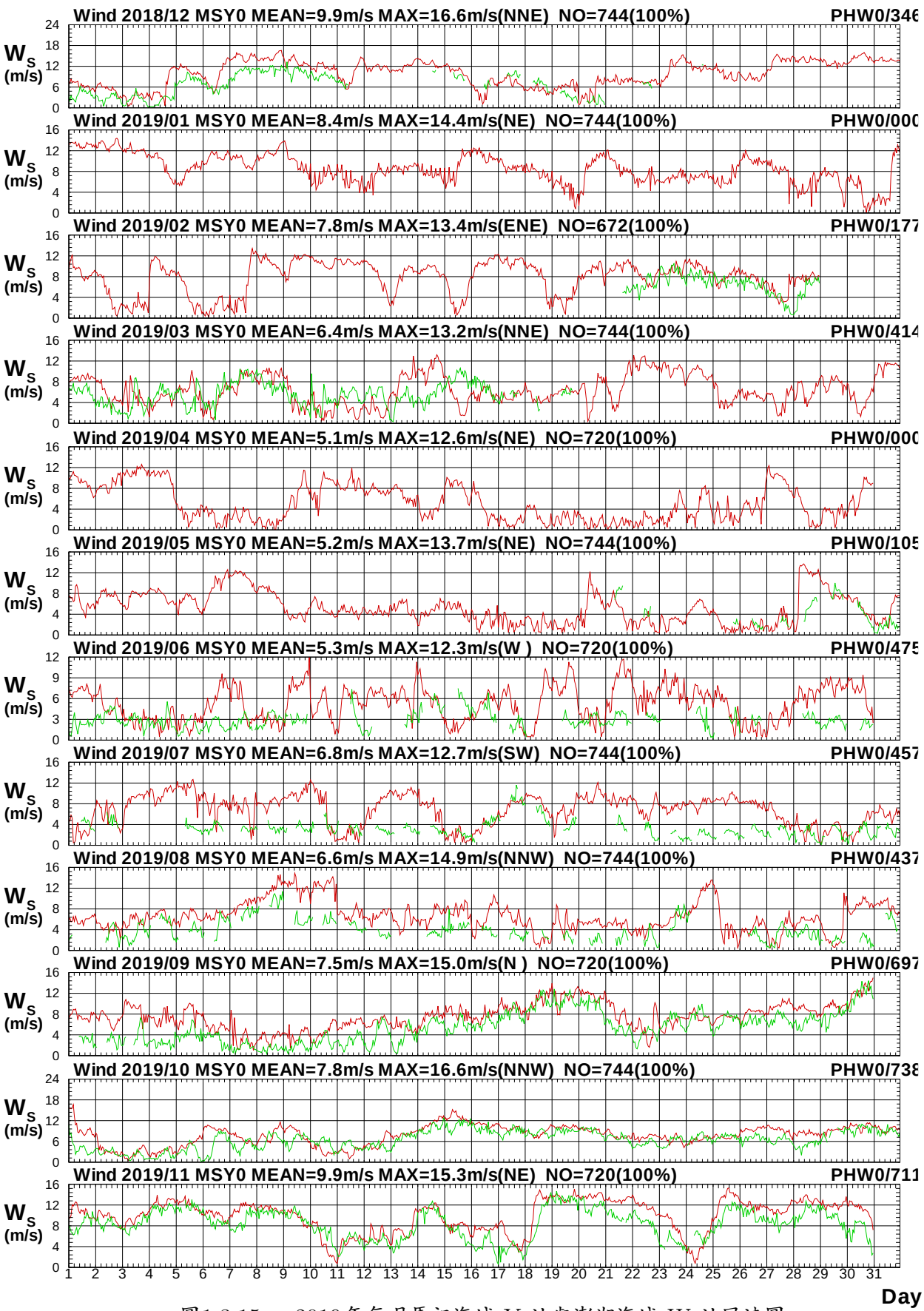


圖1.3.15a　2019年每月馬祖海域 Y 站與澎湖海域 W 站風速圖

W18CMSY0.1HA W18CPHW0.1H0 W191MSY0.1HA W191PHW0.1H0 W192MSY0.1HA W192PHW0.1H0
W193MSY0.1HA W193PHW0.1H0 W194MSY0.1HA W194PHW0.1H0 W195MSY0.1HA W195PHW0.1H0

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Wind Direction in Ma-Tsu Seas of MSY0 at 2019

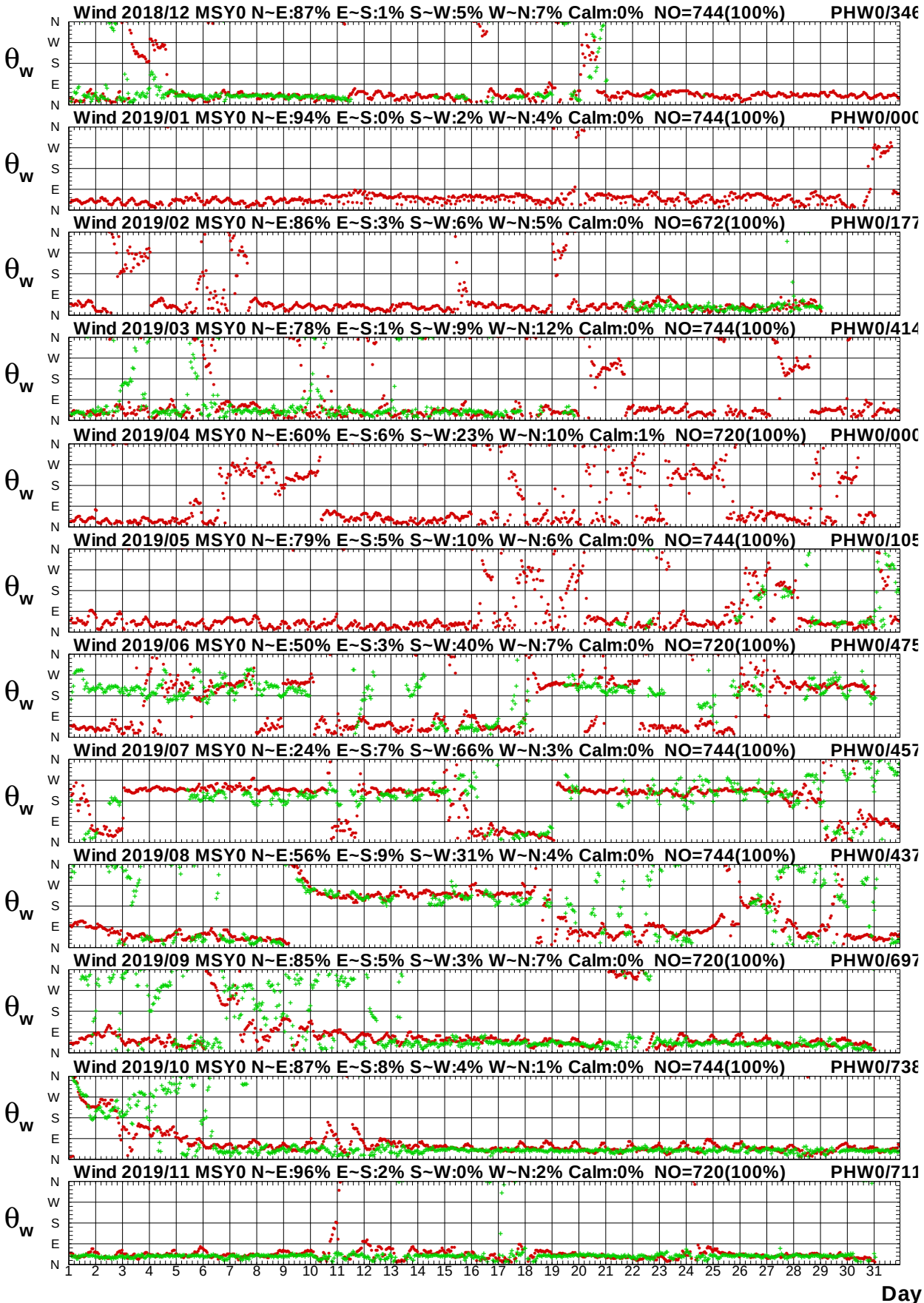


圖1.3.15b　2019年每月馬祖海域 Y 站與澎湖海域 W 站風向圖

W18CMSY0.1HA W18CPHW0.1H0 W191MSY0.1HA W191PHW0.1H0 W192MSY0.1HA W192PHW0.1H0
W193MSY0.1HA W193PHW0.1H0 W194MSY0.1HA W194PHW0.1H0 W195MSY0.1HA W195PHW0.1H0

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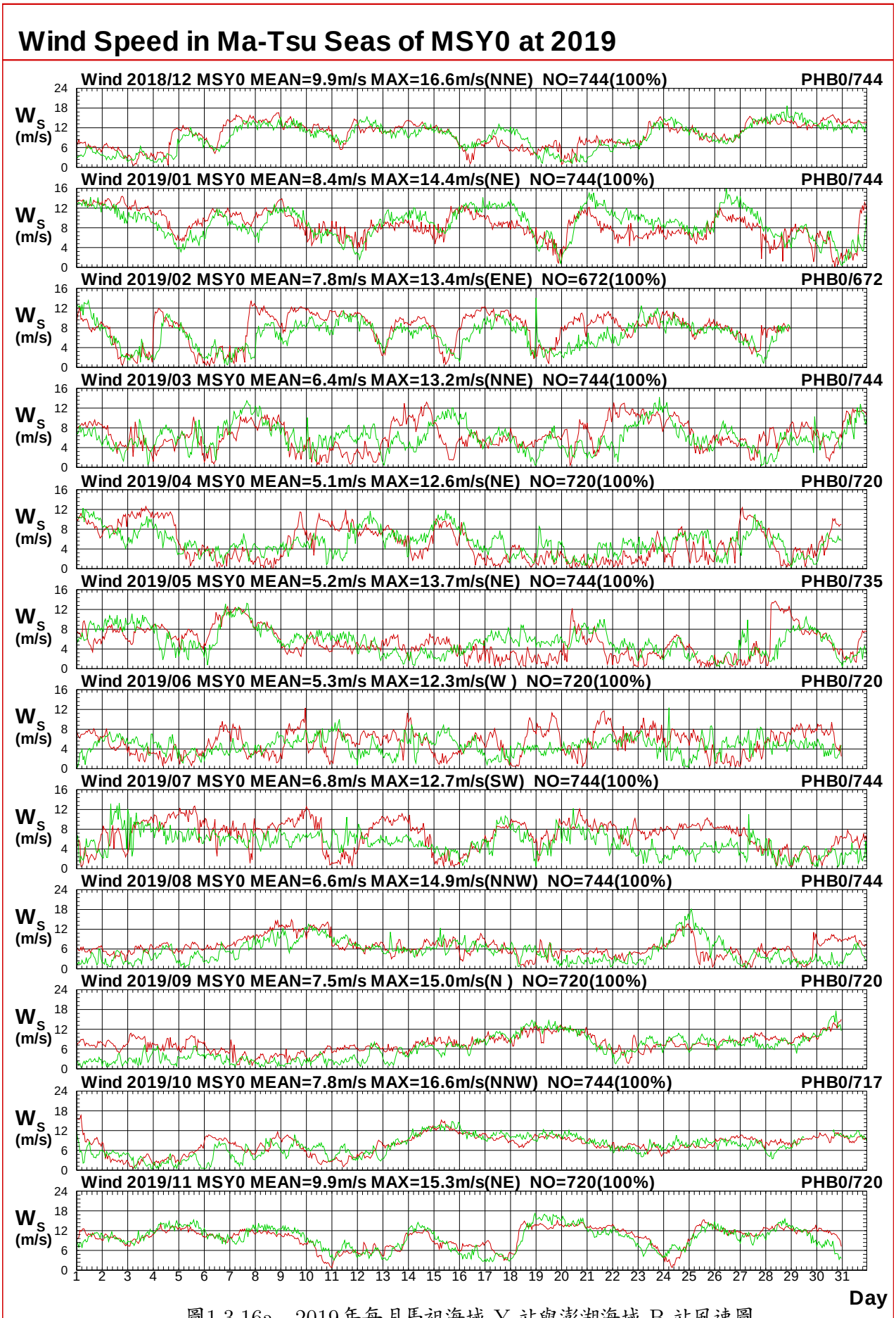


圖1.3.16a　2019年每月馬祖海域 Y 站與澎湖海域 B 站風速圖

W18CMSY0.1HA W18CPHB0.1H0 W191MSY0.1HA W191PHB0.1H0 W192MSY0.1HA W192PHB0.1H0
W193MSY0.1HA W193PHB0.1H0 W194MSY0.1HA W194PHB0.1H0 W195MSY0.1HA W195PHB0.1H0

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Wind Direction in Ma-Tsu Seas of MSY0 at 2019

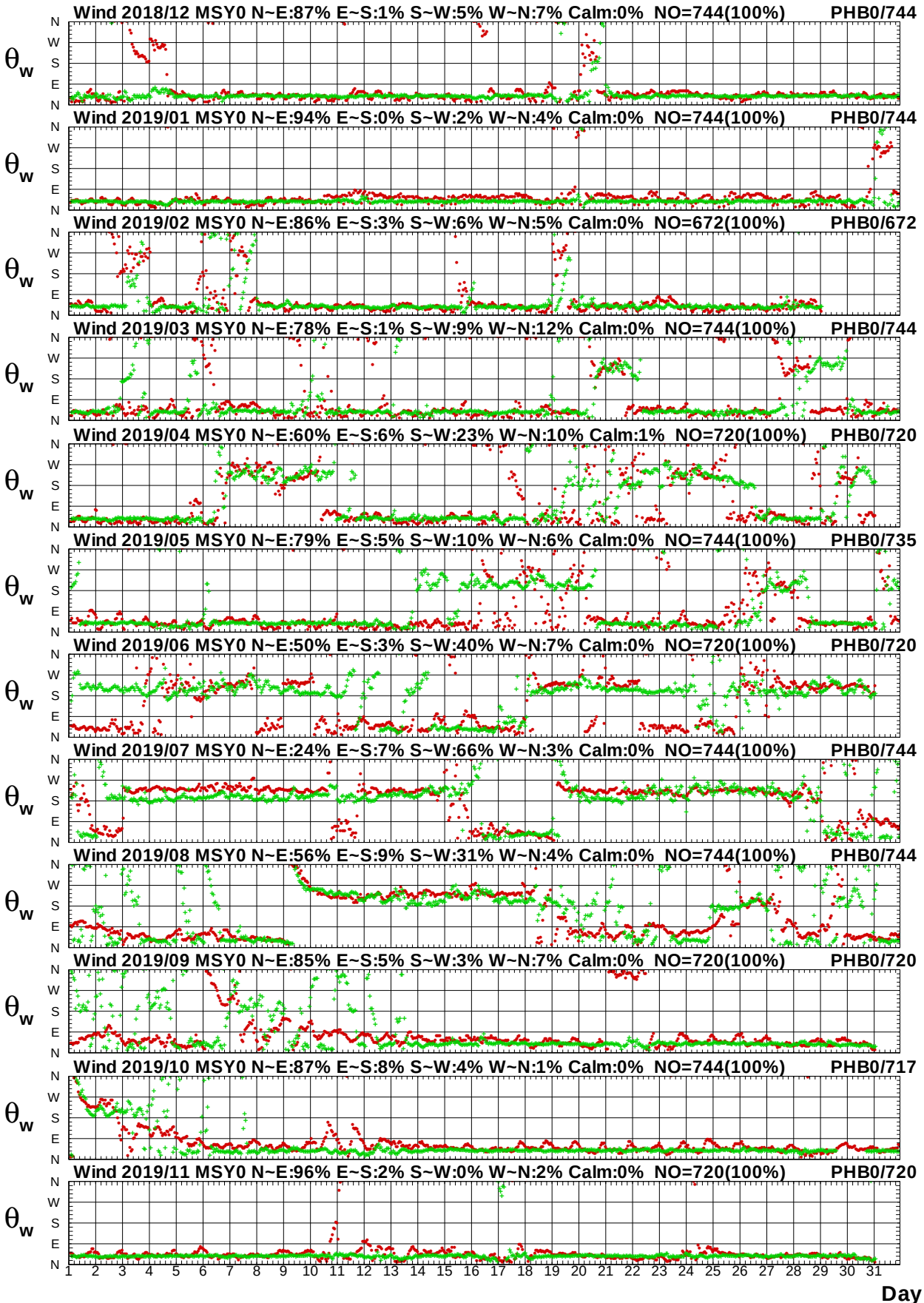


圖1.3.16b　2019年每月馬祖海域 Y 站與澎湖海域 B 站風向圖

Wind Speed in Ma-Tsu Seas of MSY0 at 2019

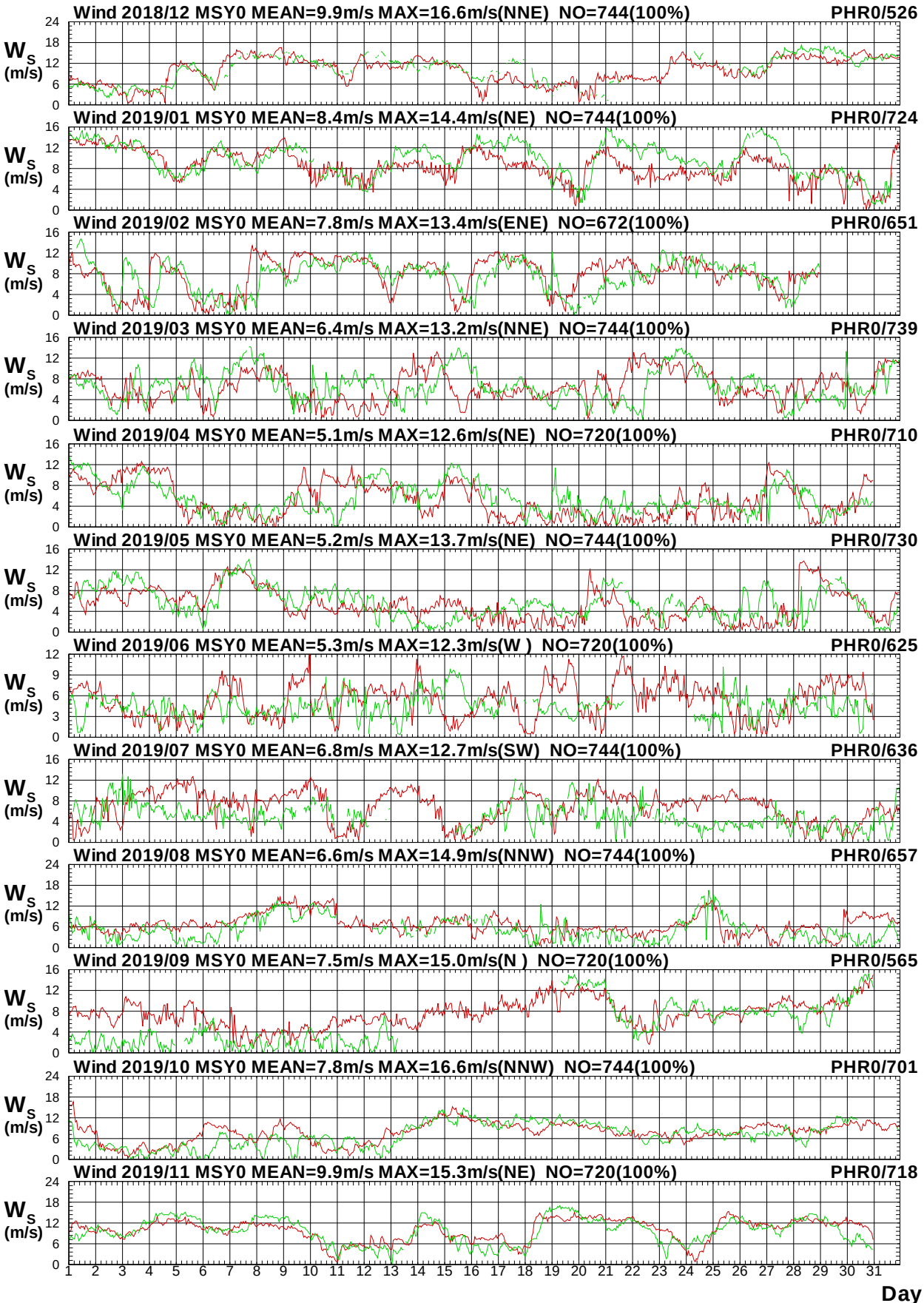


圖1.3.17a　2019年每月馬祖海域 Y 站與澎湖海域 R 站風速圖

W18CMSY0.1HA W18CPHR0.1H0 W191MSY0.1HA W191PHR0.1H0 W192MSY0.1HA W192PHR0.1H0
W193MSY0.1HA W193PHR0.1H0 W194MSY0.1HA W194PHR0.1H0 W195MSY0.1HA W195PHR0.1H0

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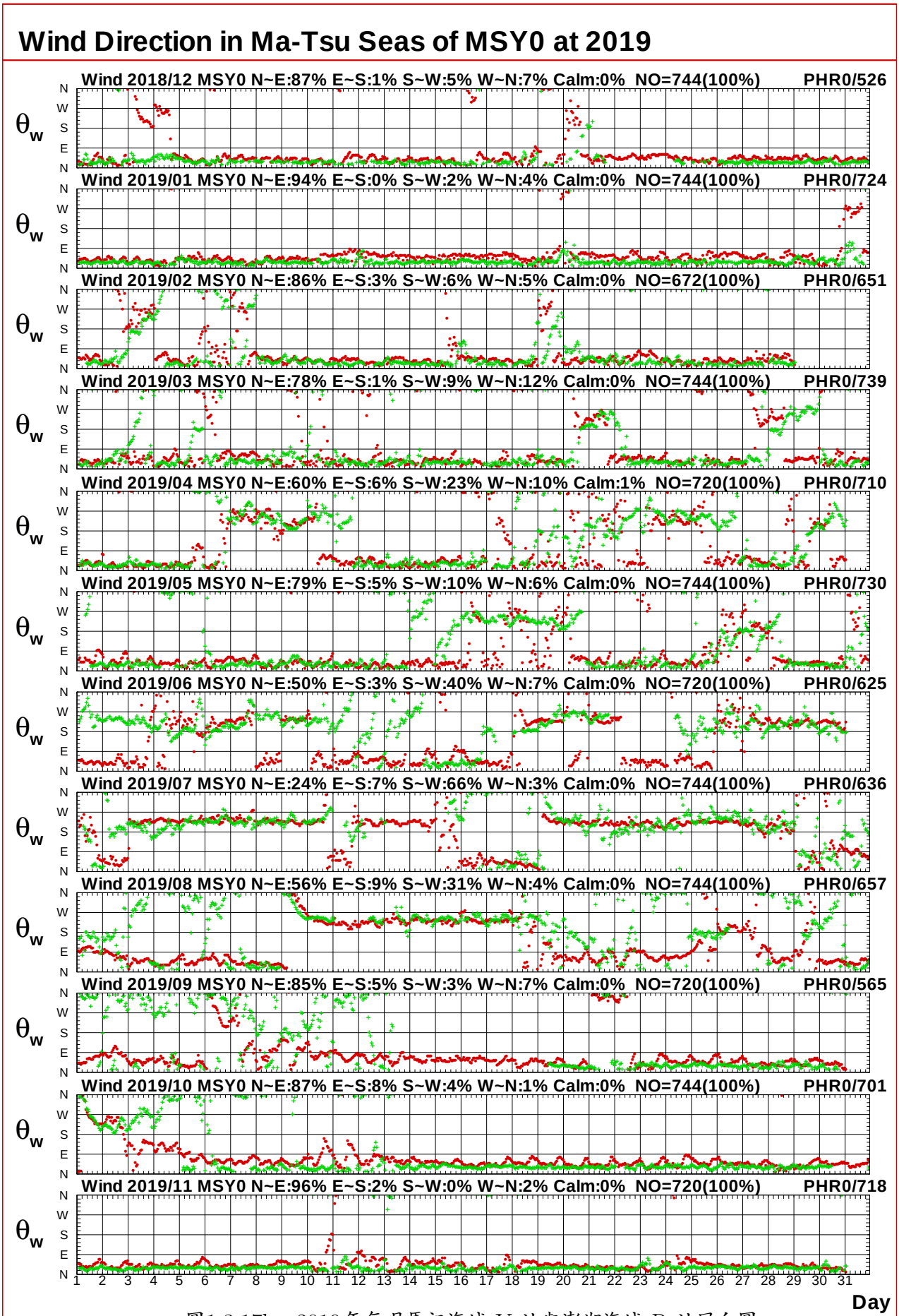


圖1.3.17b　2019年每月馬祖海域 Y 站與澎湖海域 R 站風向圖

Wind Speed in Ma-Tsu Seas of MSY0 at 2019

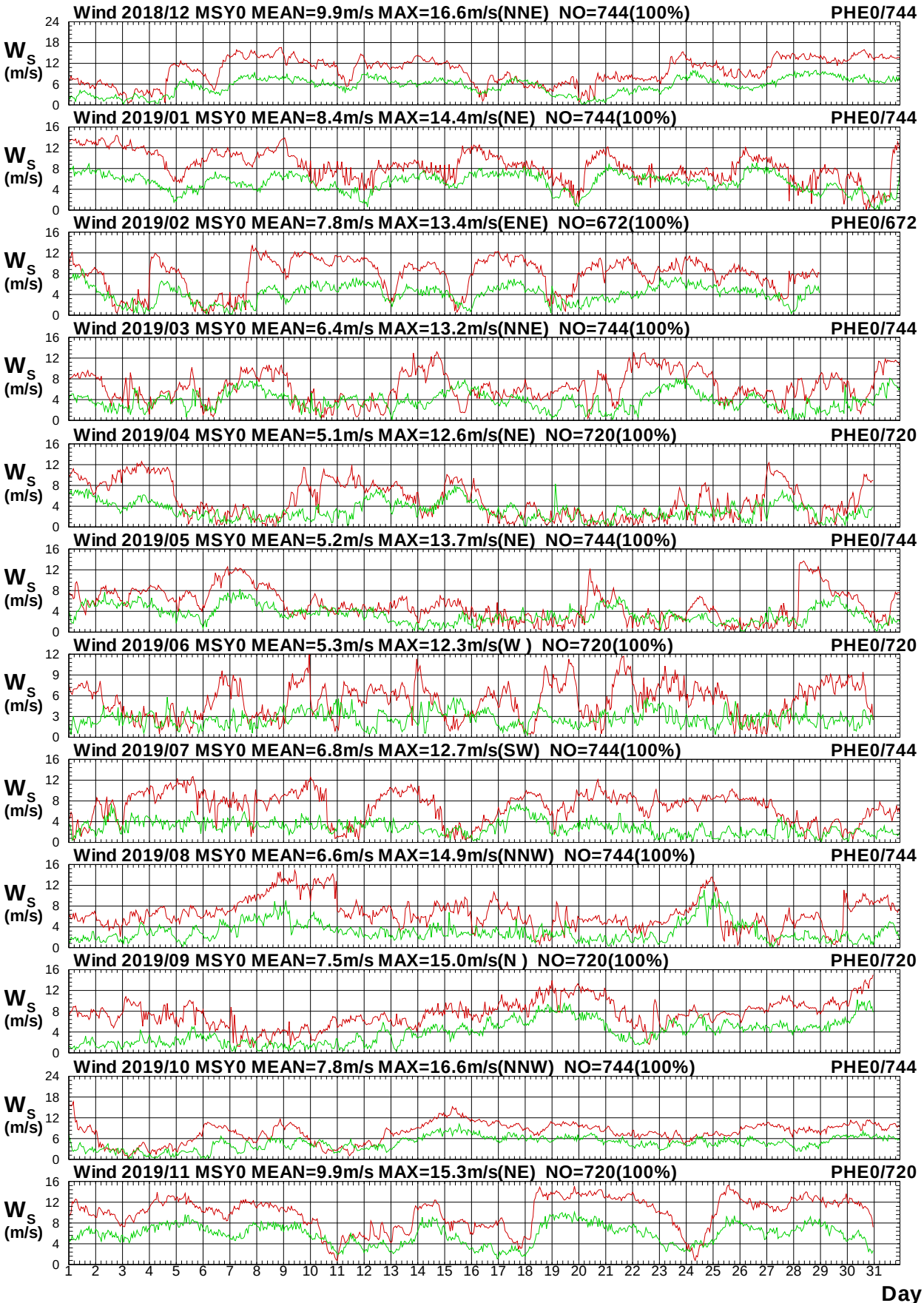


圖1.3.18a　2019年每月馬祖海域 Y 站與澎湖海域 E 站風速圖

W18CMSY0.1HA W18CPHE0.1H0 W191MSY0.1HA W191PHE0.1H0 W192MSY0.1HA W192PHE0.1H0
W193MSY0.1HA W193PHE0.1H0 W194MSY0.1HA W194PHE0.1H0 W195MSY0.1HA W195PHE0.1H0

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Wind Direction in Ma-Tsu Seas of MSY0 at 2019

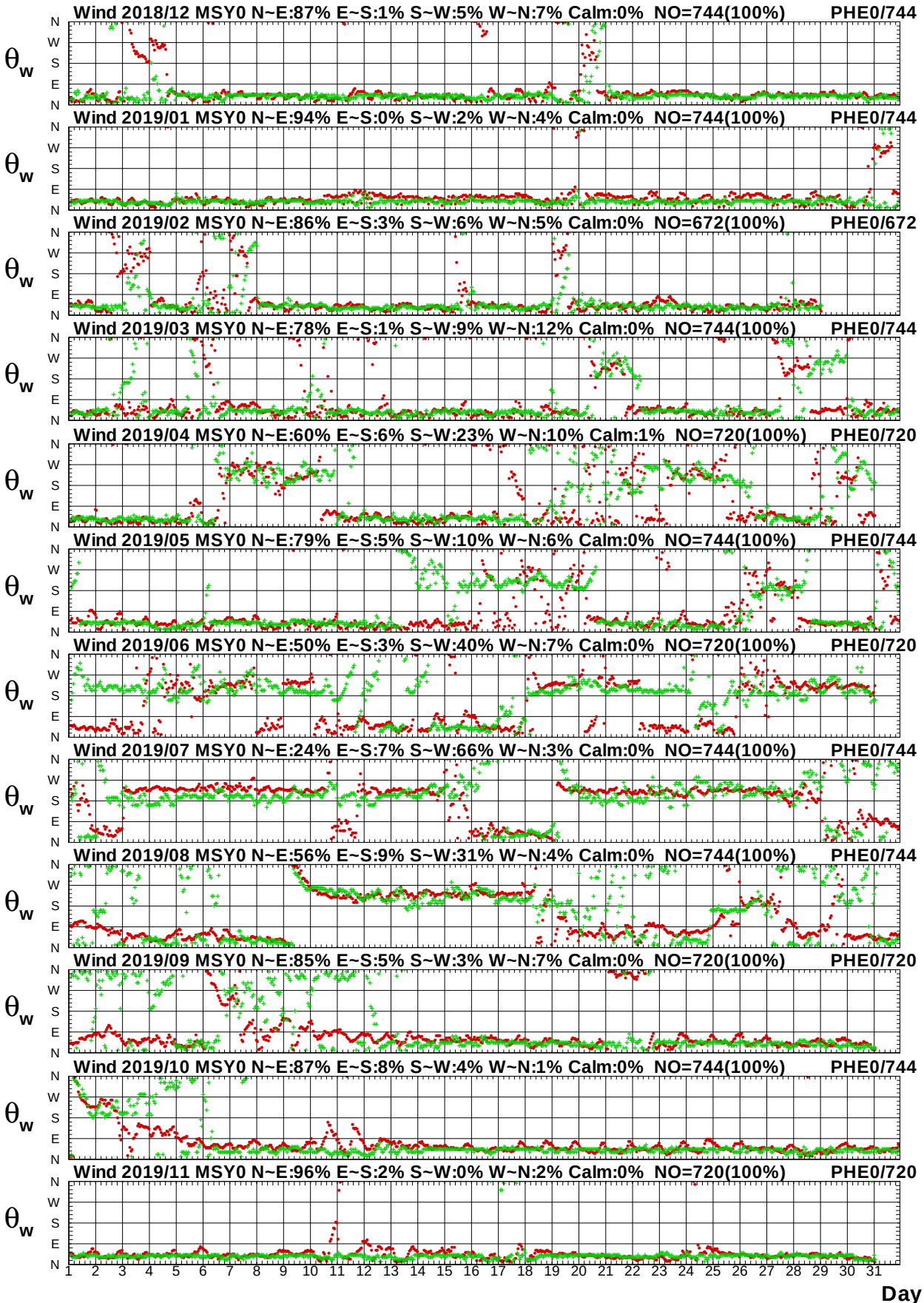


圖1.3.18b　2019年每月馬祖海域 Y 站與澎湖海域 E 站風向圖

1.4　2019 年馬祖海域風力主要測站 2(修補後)與其他測站(修補前)每月風力歷線比較圖

Wind Speed in Ma-Tsu Seas of MSW0 at 2019

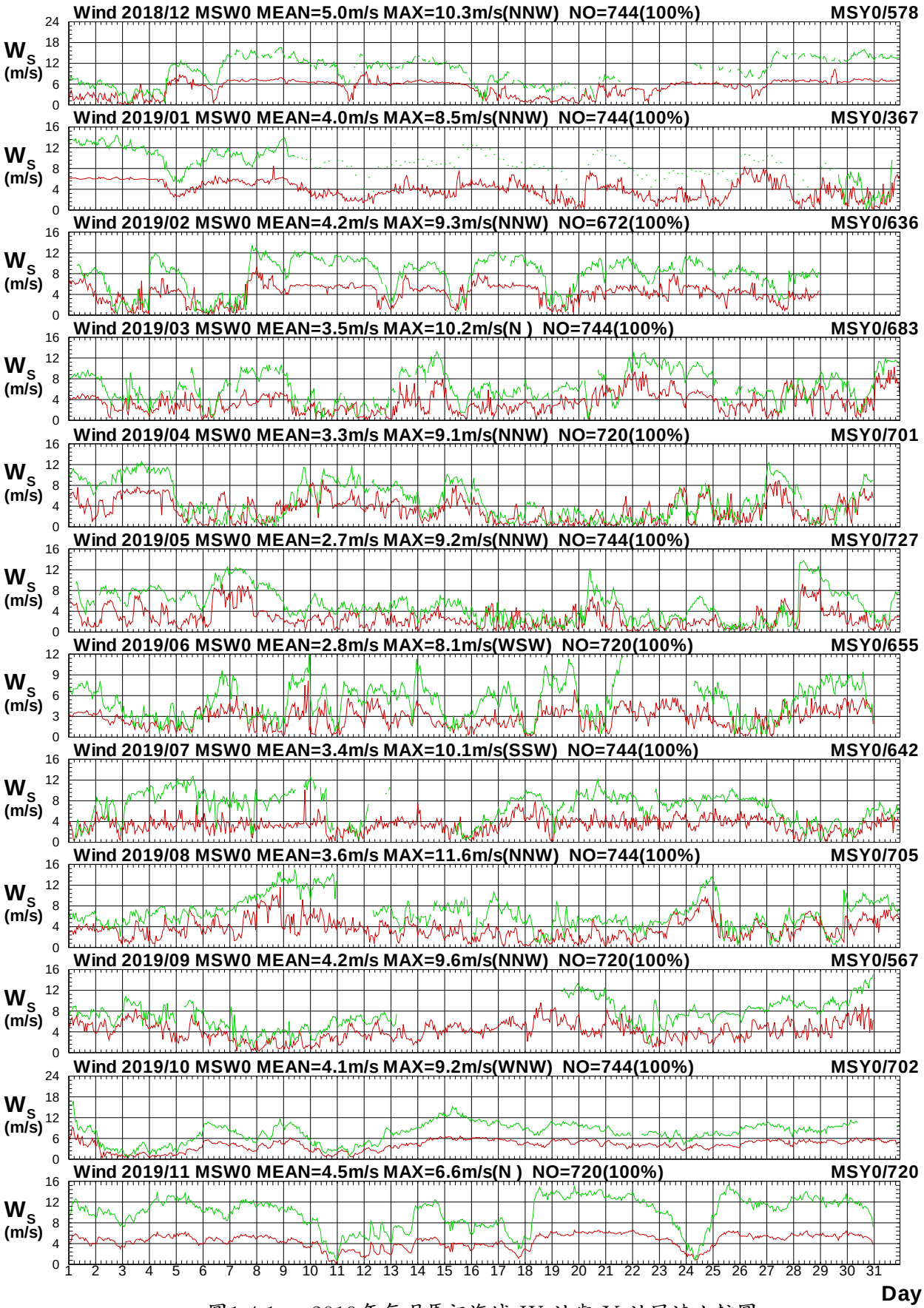


圖1.4.1a　2019年每月馬祖海域 W 站與 Y 站風速比較圖

W18CMSW0.1HA W18CMSY0.1H0 W191MSW0.1HA W191MSY0.1H0 W192MSW0.1HA W192MSY0.1H0
W193MSW0.1HA W193MSY0.1H0 W194MSW0.1HA W194MSY0.1H0 W195MSW0.1HA W195MSY0.1H0

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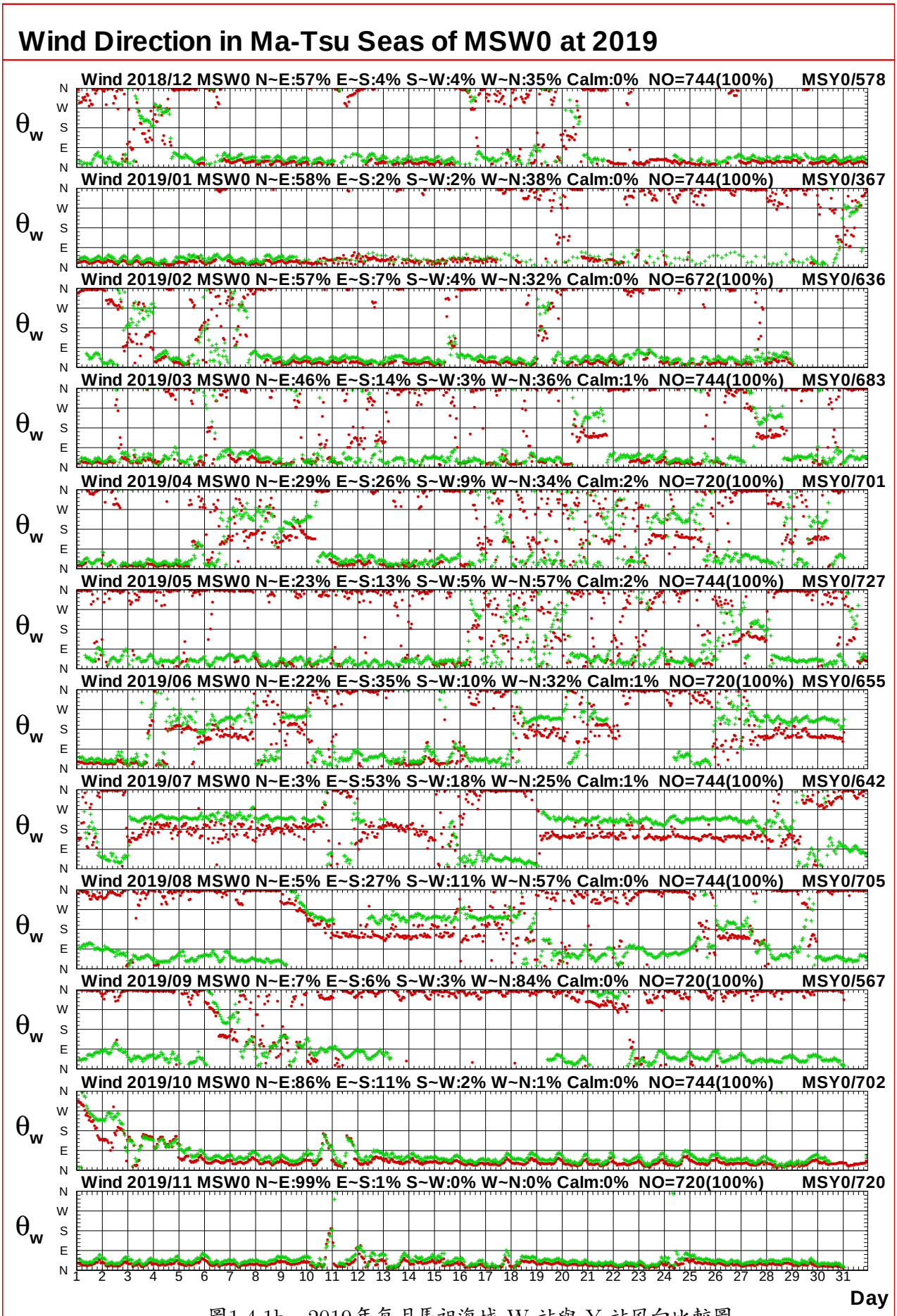


圖1.4.1b　2019年每月馬祖海域 W 站與 Y 站風向比較圖

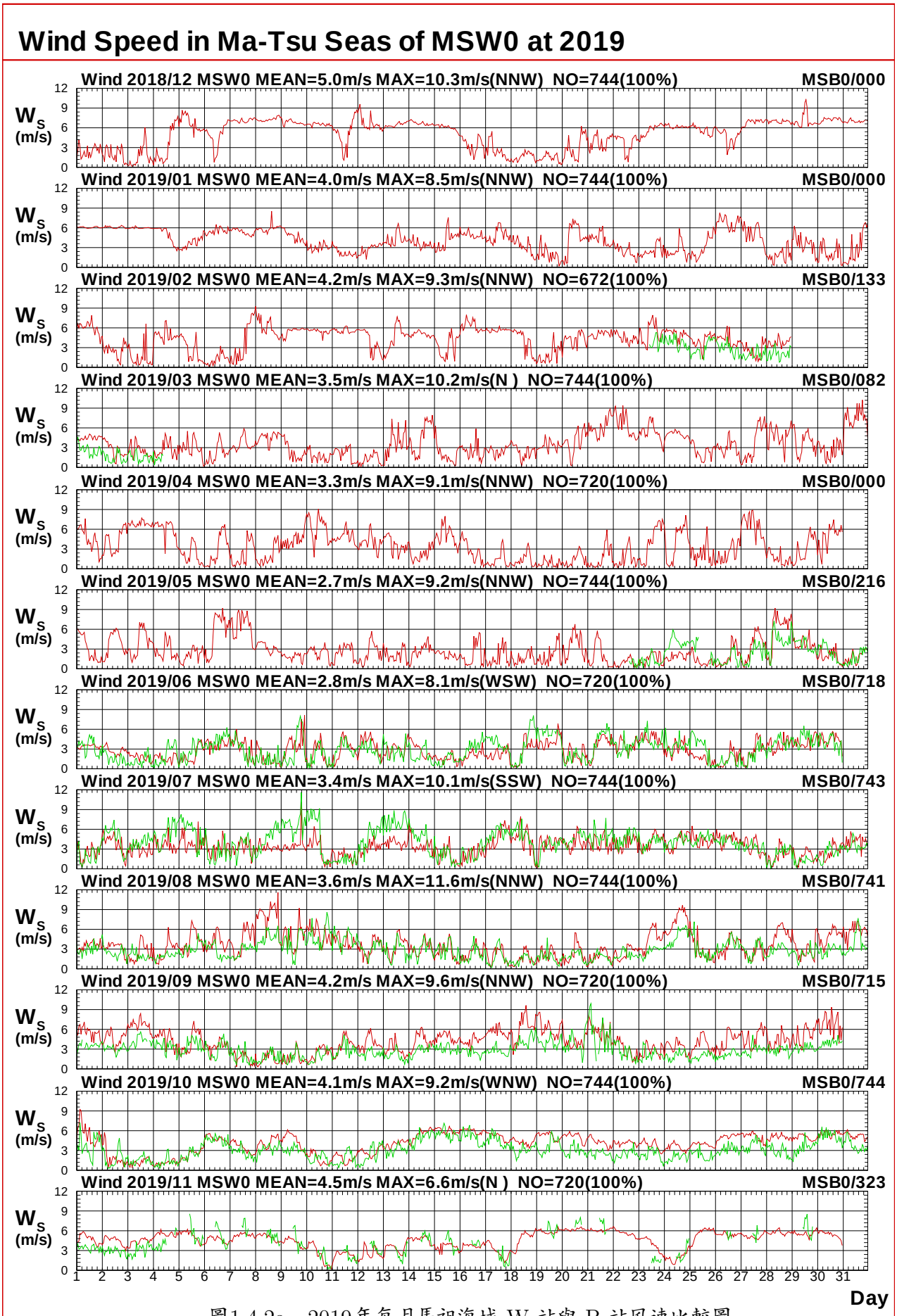


圖1.4.2a　2019年每月馬祖海域 W 站與 B 站風速比較圖

W18CMSW0.1HA W18CMSB0.1H0 W191MSW0.1HA W191MSB0.1H0 W192MSW0.1HA W192MSB0.1H0
W193MSW0.1HA W193MSB0.1H0 W194MSW0.1HA W194MSB0.1H0 W195MSW0.1HA W195MSB0.1H0

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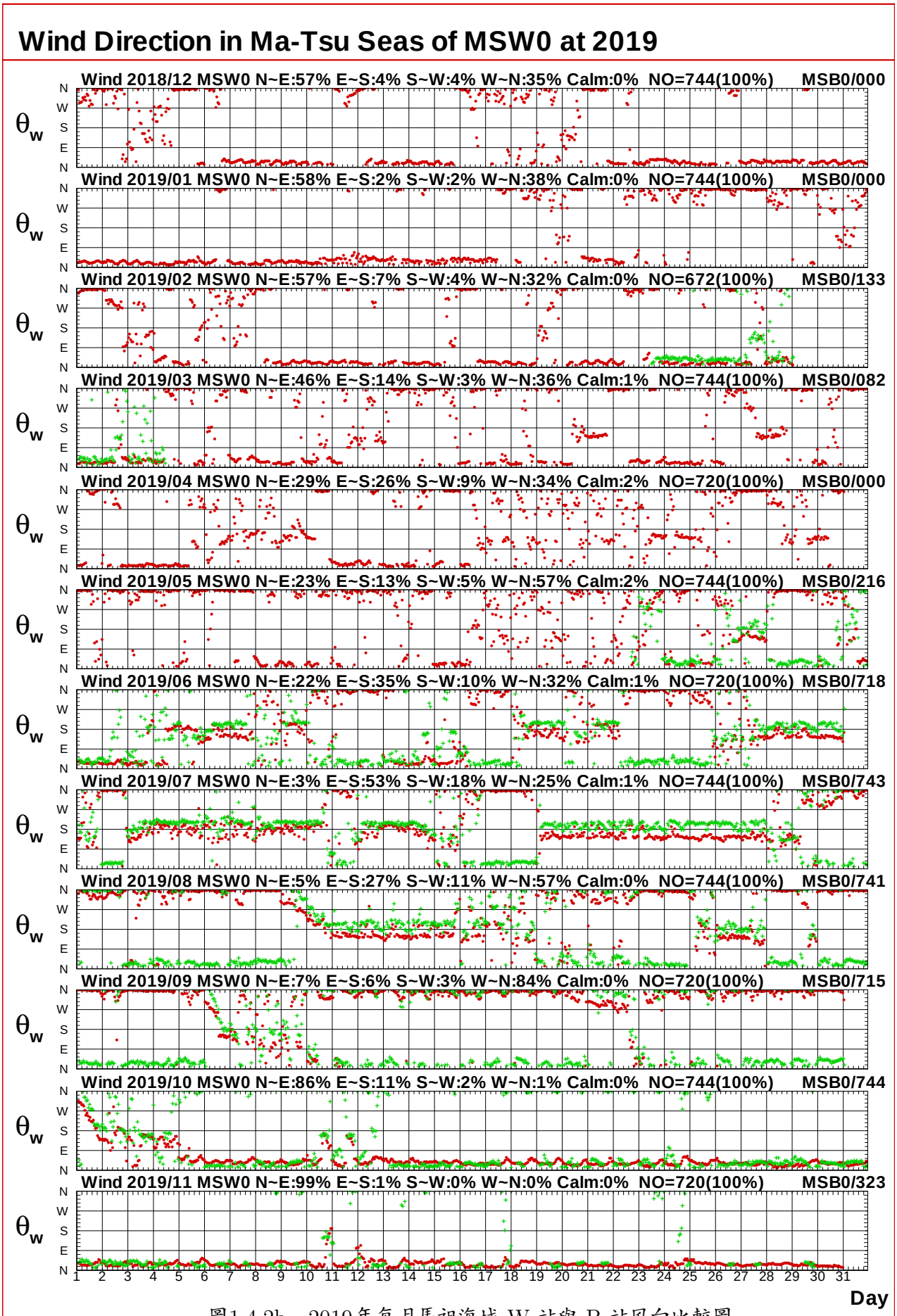


圖1.4.2b　2019年每月馬祖海域 W 站與 B 站風向比較圖

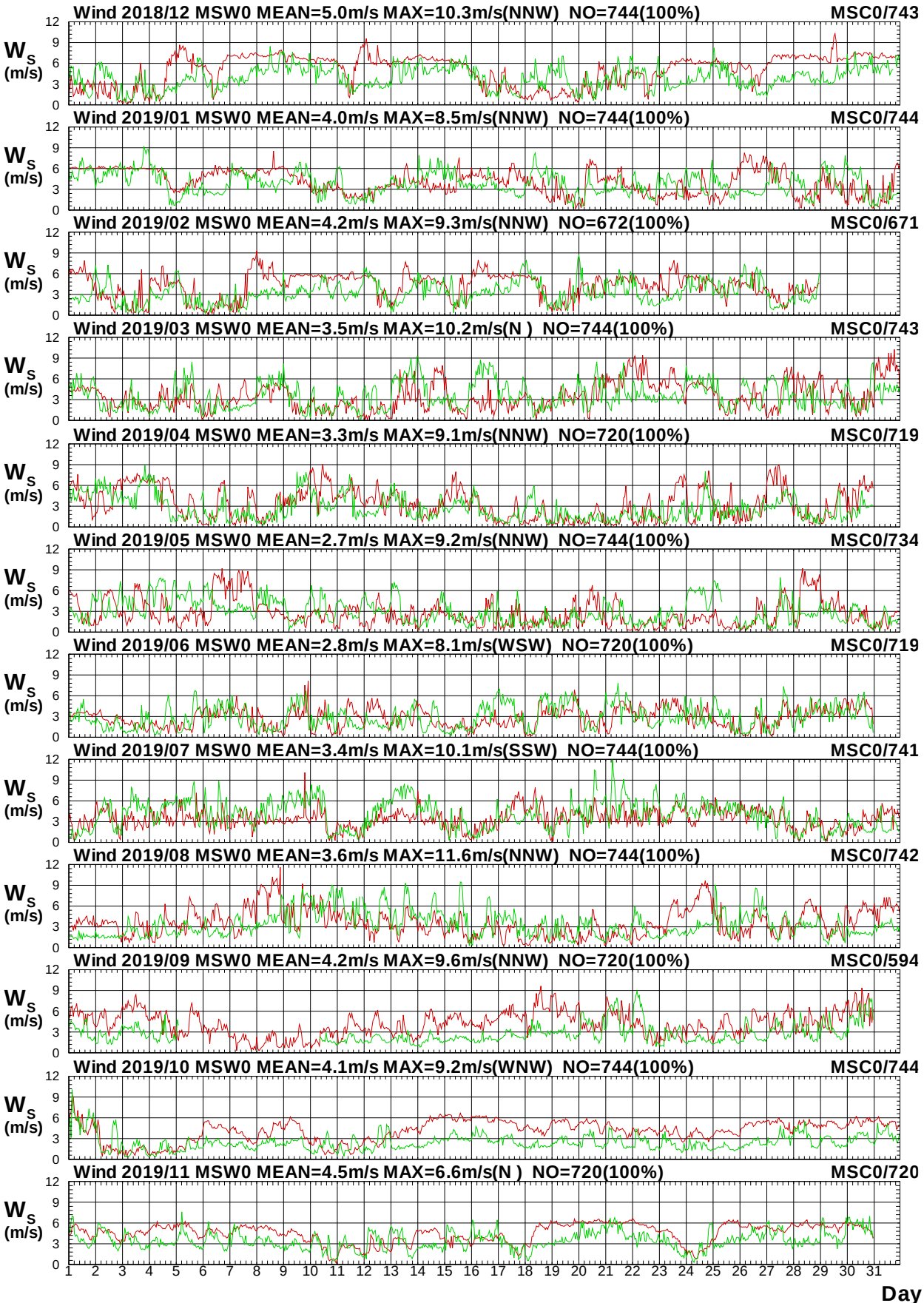


圖1.4.3a　2019年每月馬祖海域 W 站與 C 站風速比較圖

W18CMSW0.1HA W18CMSC0.1H0 W191MSW0.1HA W191MSC0.1H0 W192MSW0.1HA W192MSC0.1H0
W193MSW0.1HA W193MSC0.1H0 W194MSW0.1HA W194MSC0.1H0 W195MSW0.1HA W195MSC0.1H0

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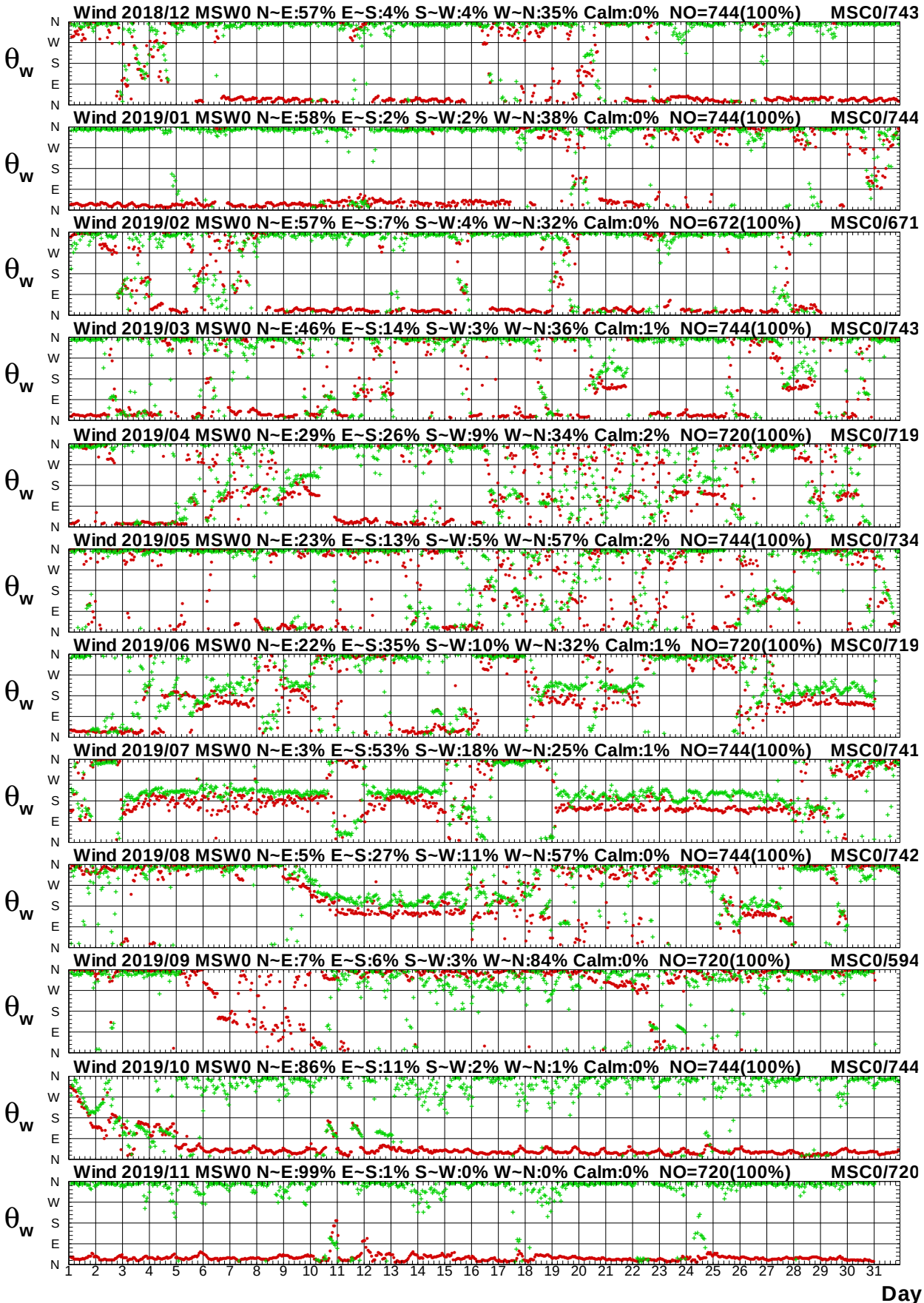


圖1.4.3b　2019年每月馬祖海域 W 站與 C 站風向比較圖

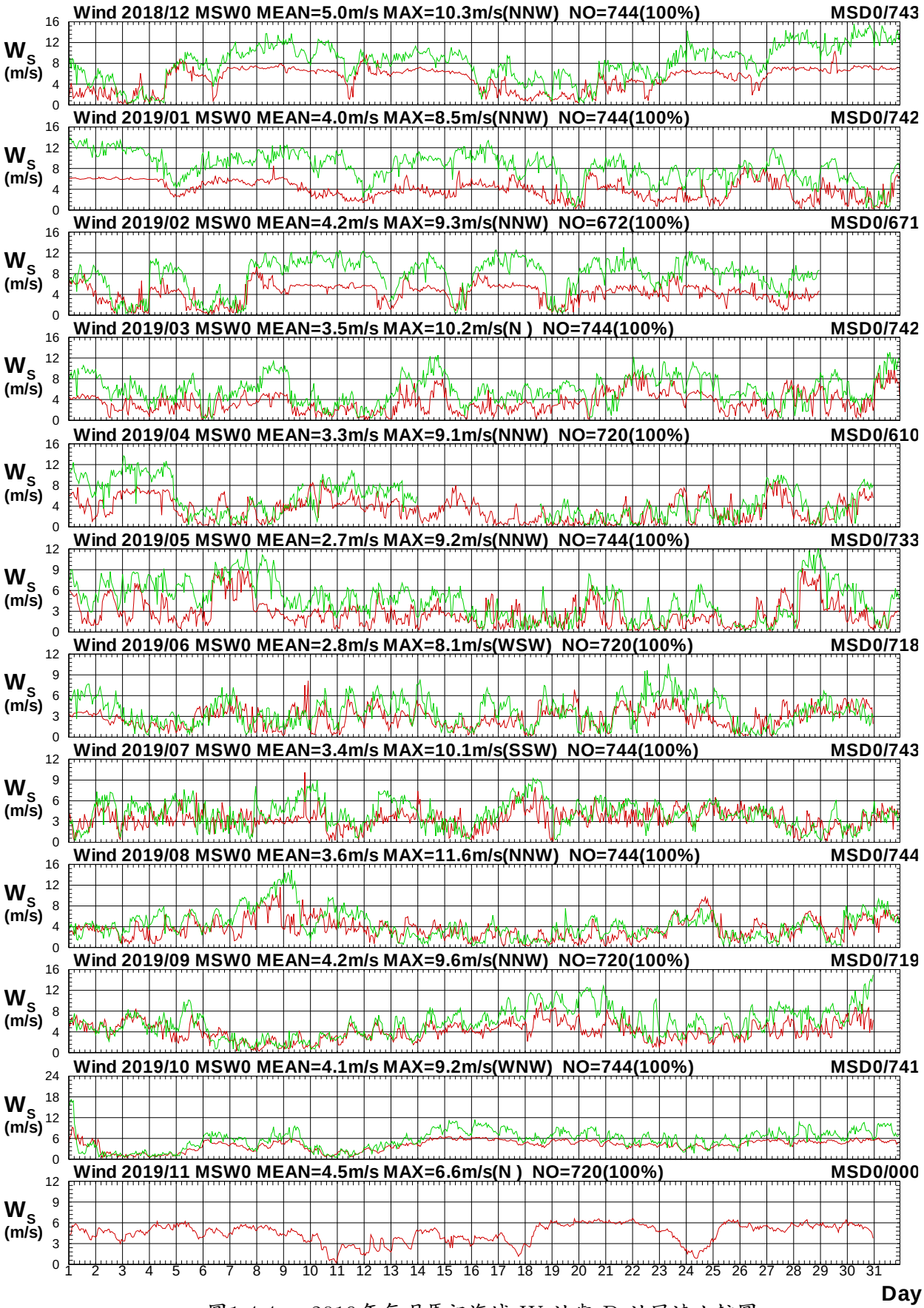


圖1.4.4a　2019年每月馬祖海域 W 站與 D 站風速比較圖

W18CMSW0.1HA W18CMSD0.1H0 W191MSW0.1HA W191MSD0.1H0 W192MSW0.1HA W192MSD0.1H0
W193MSW0.1HA W193MSD0.1H0 W194MSW0.1HA W194MSD0.1H0 W195MSW0.1HA W195MSD0.1H0

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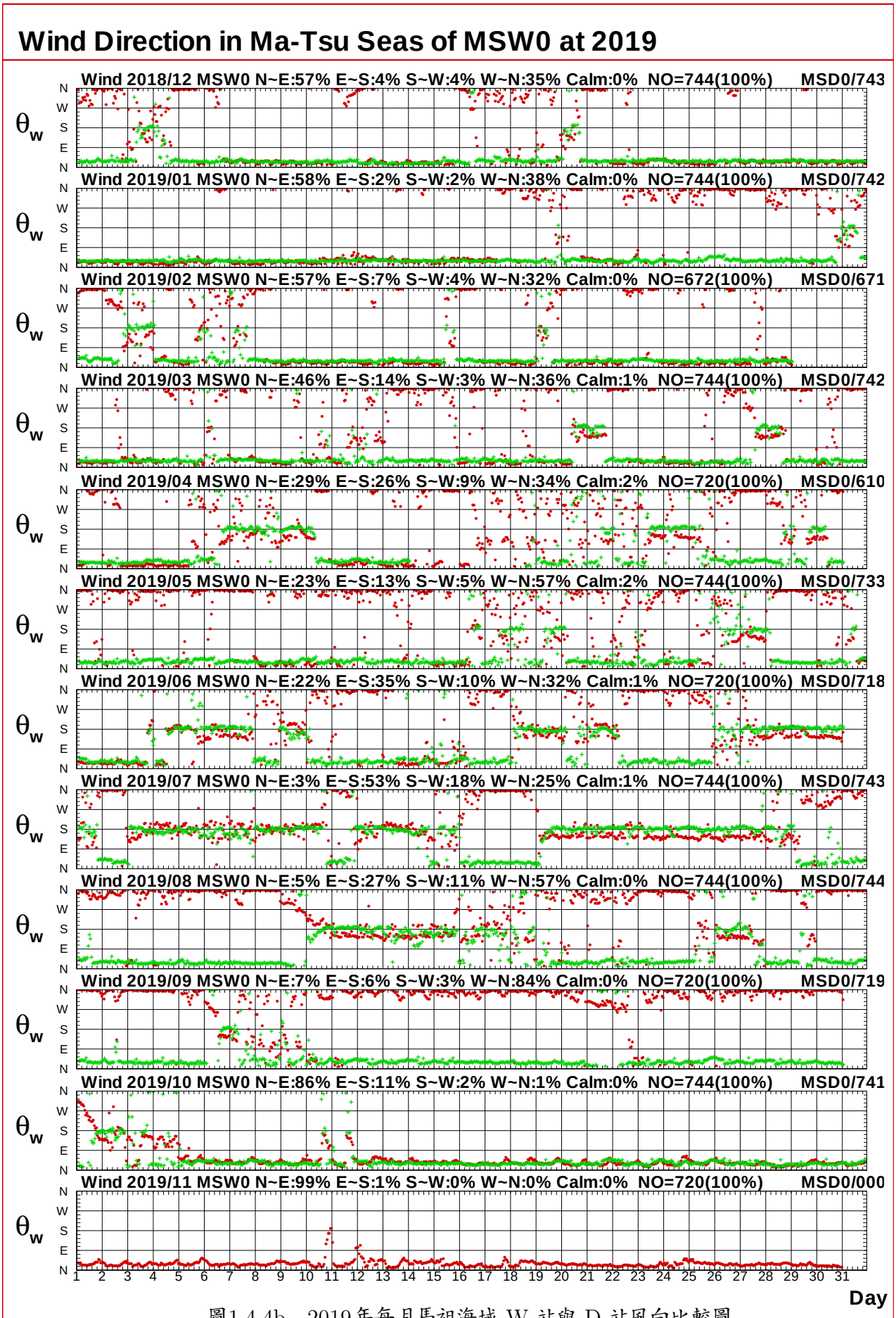


圖1.4.4b　2019年每月馬祖海域 W 站與 D 站風向比較圖

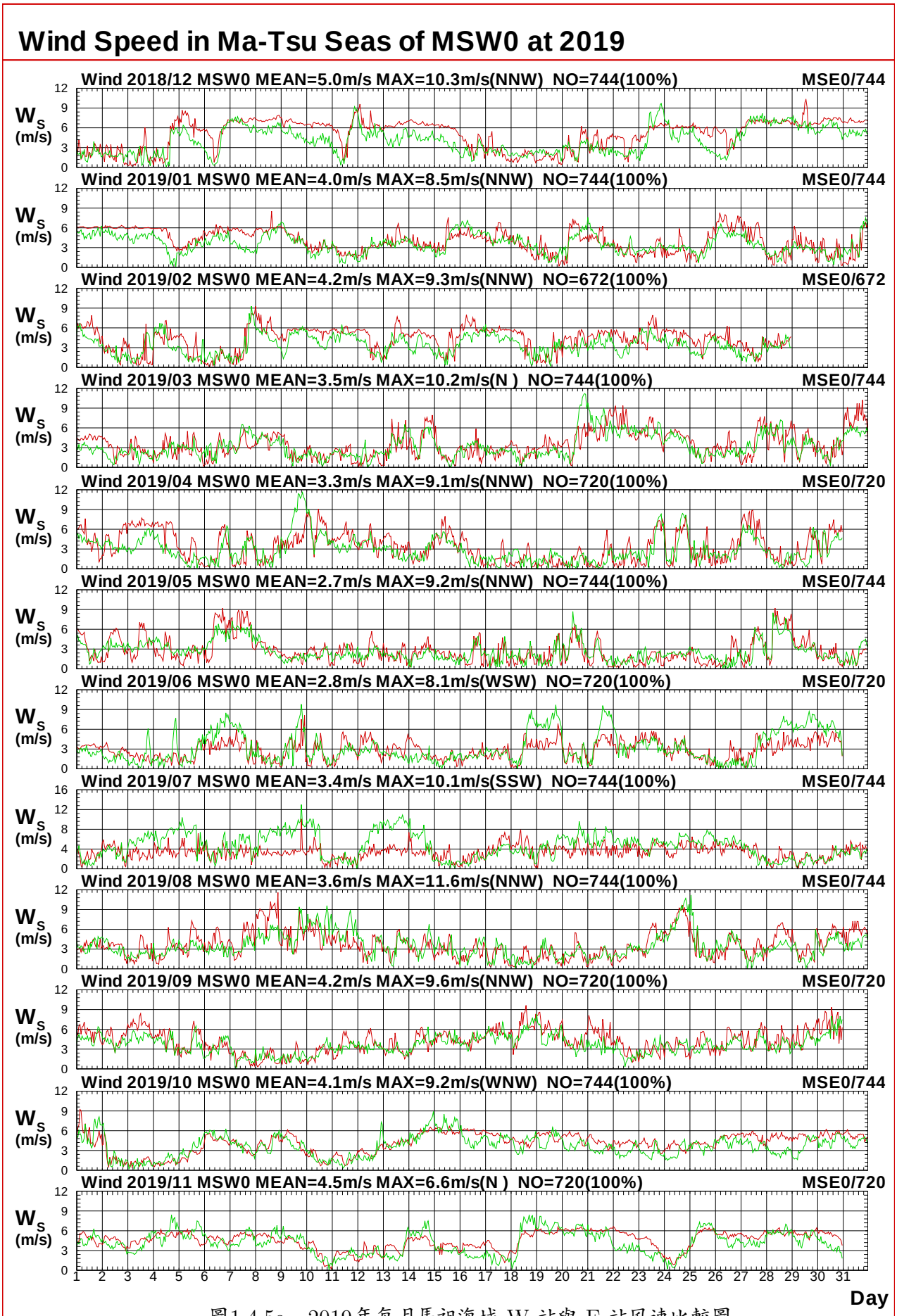


圖1.4.5a　2019年每月馬祖海域 W 站與 E 站風速比較圖

W18CMSW0.1HA W18CMSE0.1H0 W191MSW0.1HA W191MSE0.1H0 W192MSW0.1HA W192MSE0.1H0
W193MSW0.1HA W193MSE0.1H0 W194MSW0.1HA W194MSE0.1H0 W195MSW0.1HA W195MSE0.1H0

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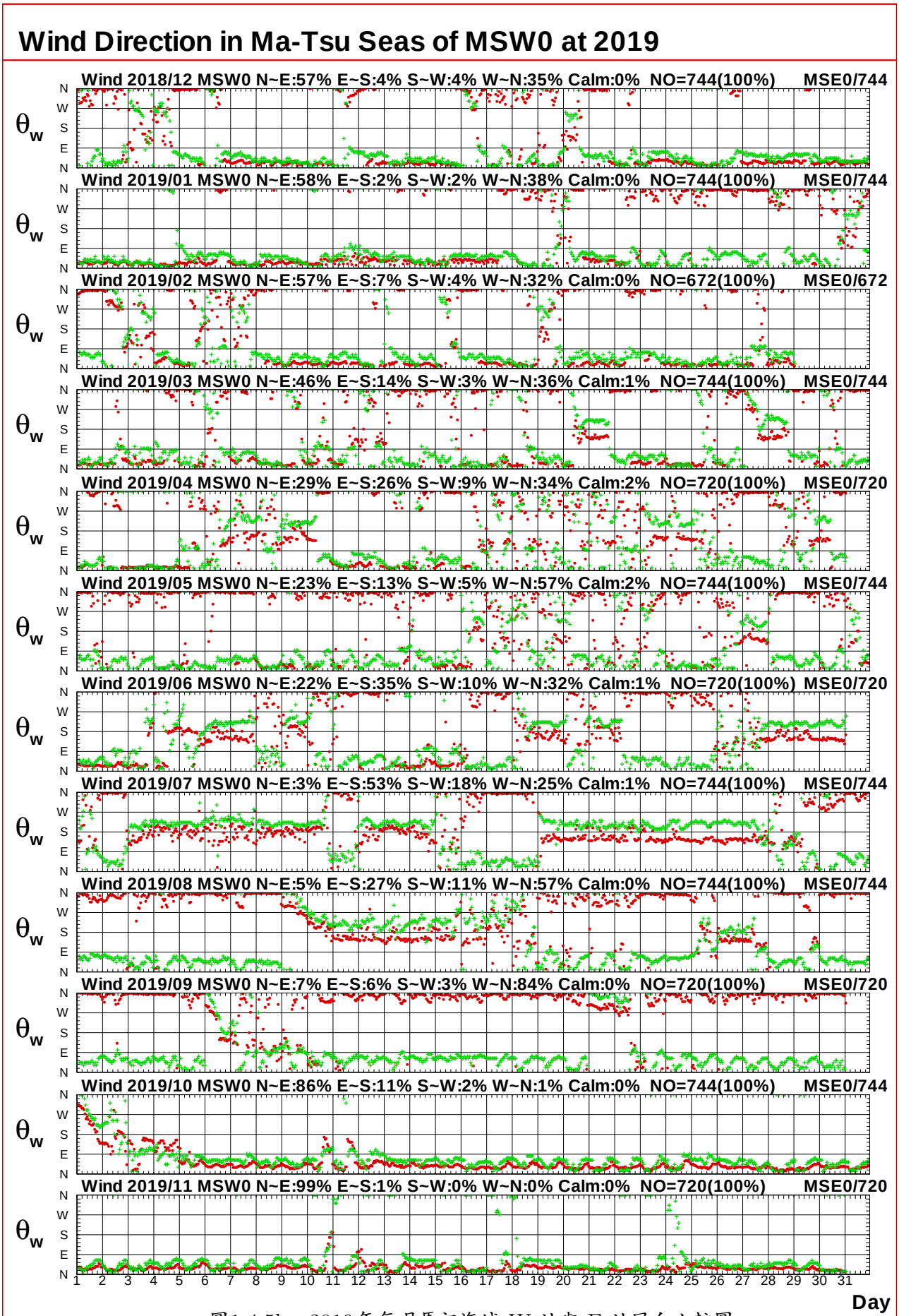


圖1.4.5b　2019年每月馬祖海域 W 站與 E 站風向比較圖

W18CMSW0.1HA W18CMSE0.1H0 W191MSW0.1HA W191MSE0.1H0 W192MSW0.1HA W192MSE0.1H0
W193MSW0.1HA W193MSE0.1H0 W194MSW0.1HA W194MSE0.1H0 W195MSW0.1HA W195MSE0.1H0

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Wind Speed in Ma-Tsu Seas of MSW0 at 2019

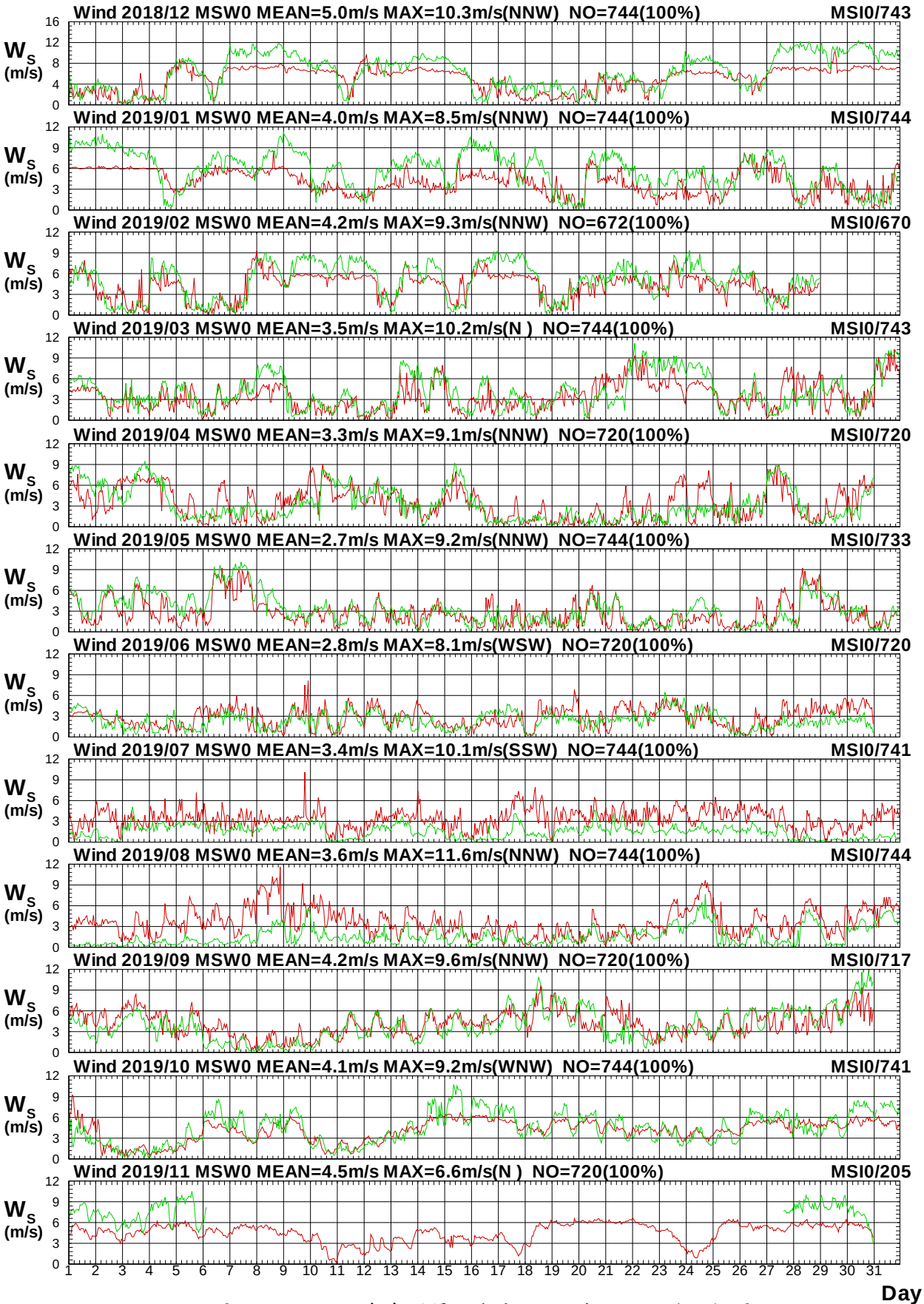


圖1.4.6a　2019年每月馬祖海域 W 站與 I 站風速比較圖

W18CMSW0.1HA W18CMSI0.1H0 W191MSW0.1HA W191MSI0.1H0 W192MSW0.1HA W192MSI0.1H0
W193MSW0.1HA W193MSI0.1H0 W194MSW0.1HA W194MSI0.1H0 W195MSW0.1HA W195MSI0.1H0

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Wind Direction in Ma-Tsu Seas of MSW0 at 2019

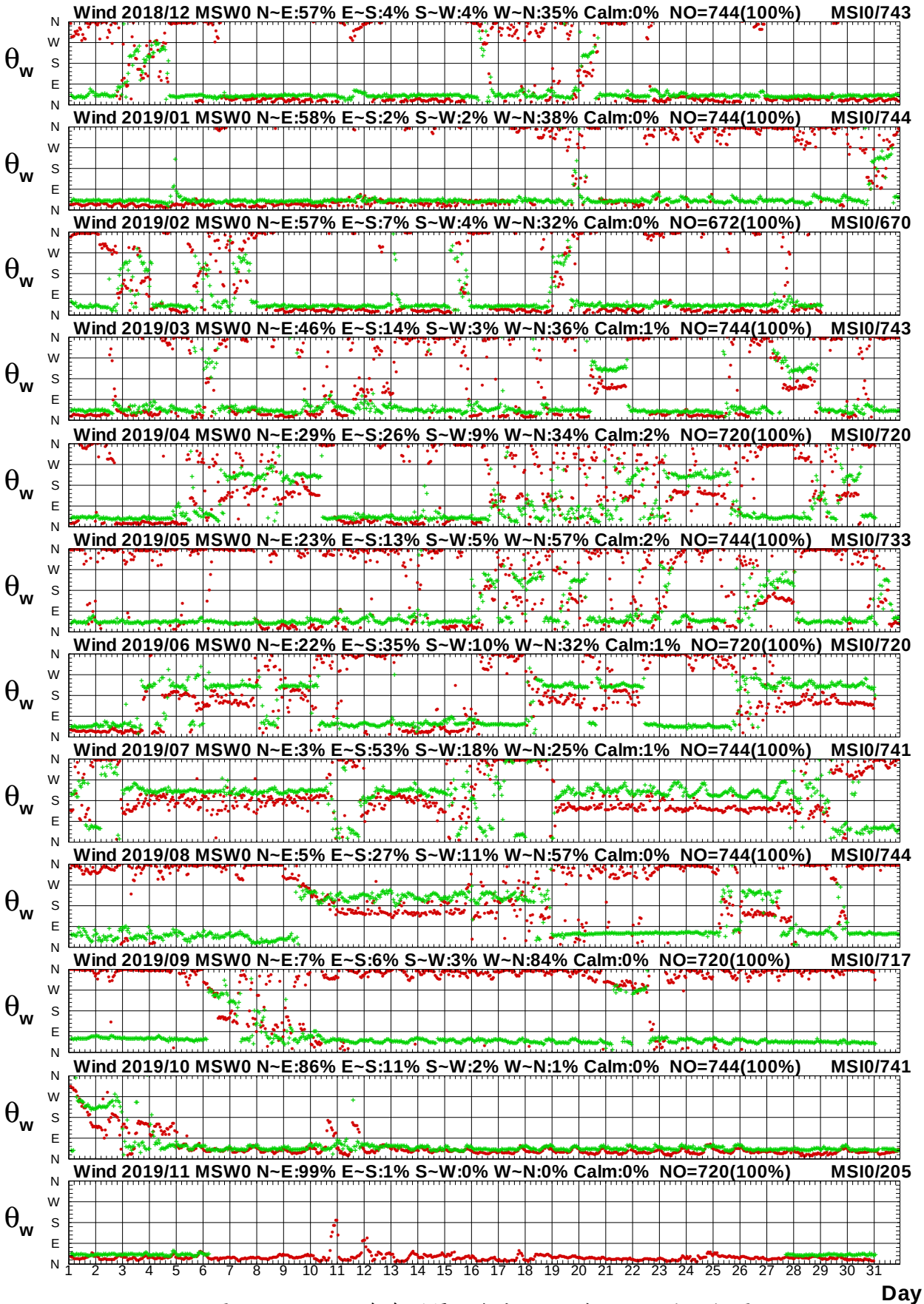


圖1.4.6b　2019年每月馬祖海域 W 站與 I 站風向比較圖

W18CMSW0.1HA W18CMSI0.1H0 W191MSW0.1HA W191MSI0.1H0 W192MSW0.1HA W192MSI0.1H0
W193MSW0.1HA W193MSI0.1H0 W194MSW0.1HA W194MSI0.1H0 W195MSW0.1HA W195MSI0.1H0

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Wind Speed in Ma-Tsu Seas of MSW0 at 2019

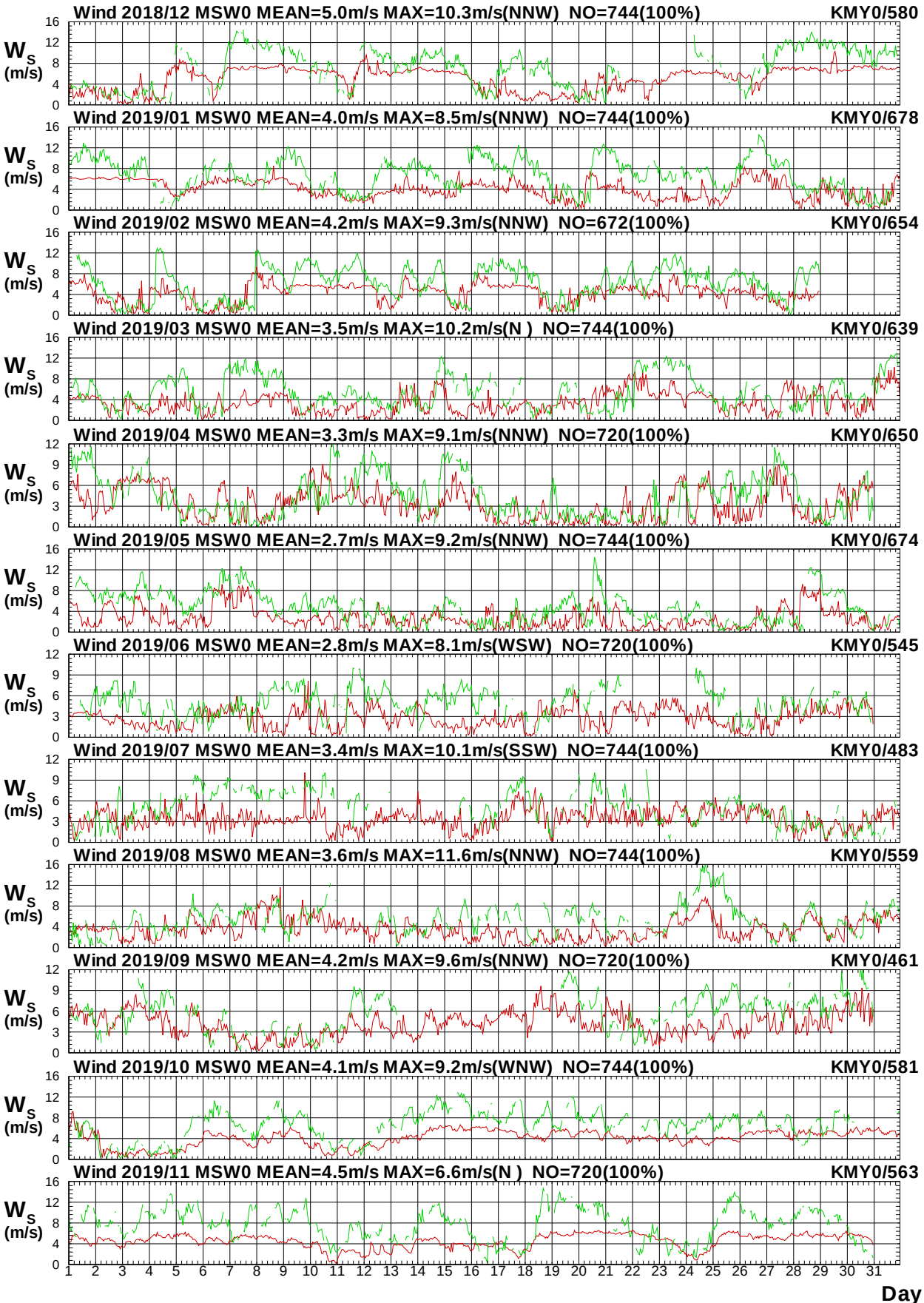


圖1.4.7a　2019年每月馬祖海域 W 站與金門海域 Y 站風速圖

W18CMSW0.1HA W18CKMY0.1H0 W191MSW0.1HA W191KMY0.1H0 W192MSW0.1HA W192KMY0.1H0
W193MSW0.1HA W193KMY0.1H0 W194MSW0.1HA W194KMY0.1H0 W195MSW0.1HA W195KMY0.1H0

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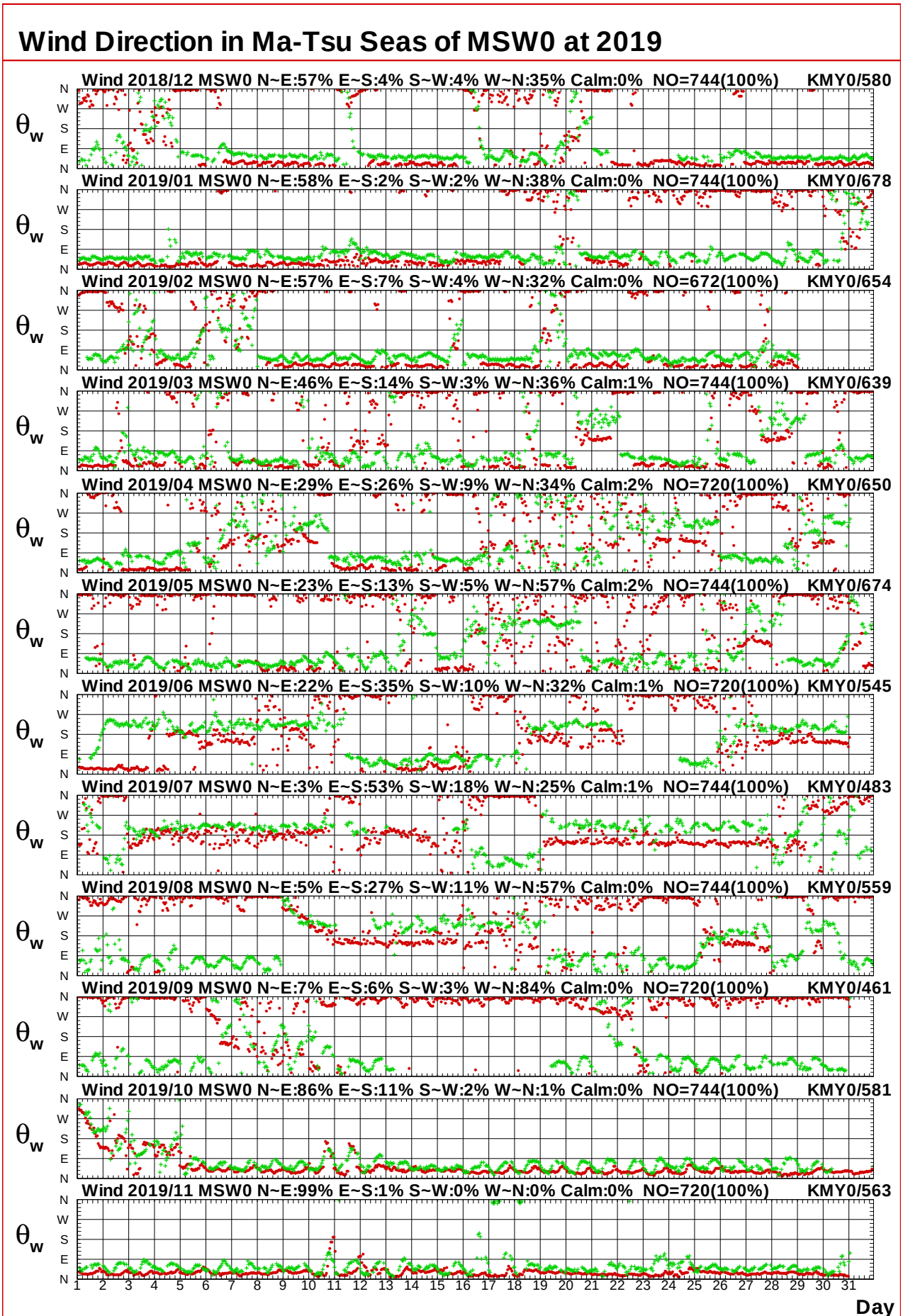


圖1.4.7b　2019年每月馬祖海域 W 站與金門海域 Y 站風向圖

Wind Speed in Ma-Tsu Seas of MSW0 at 2019

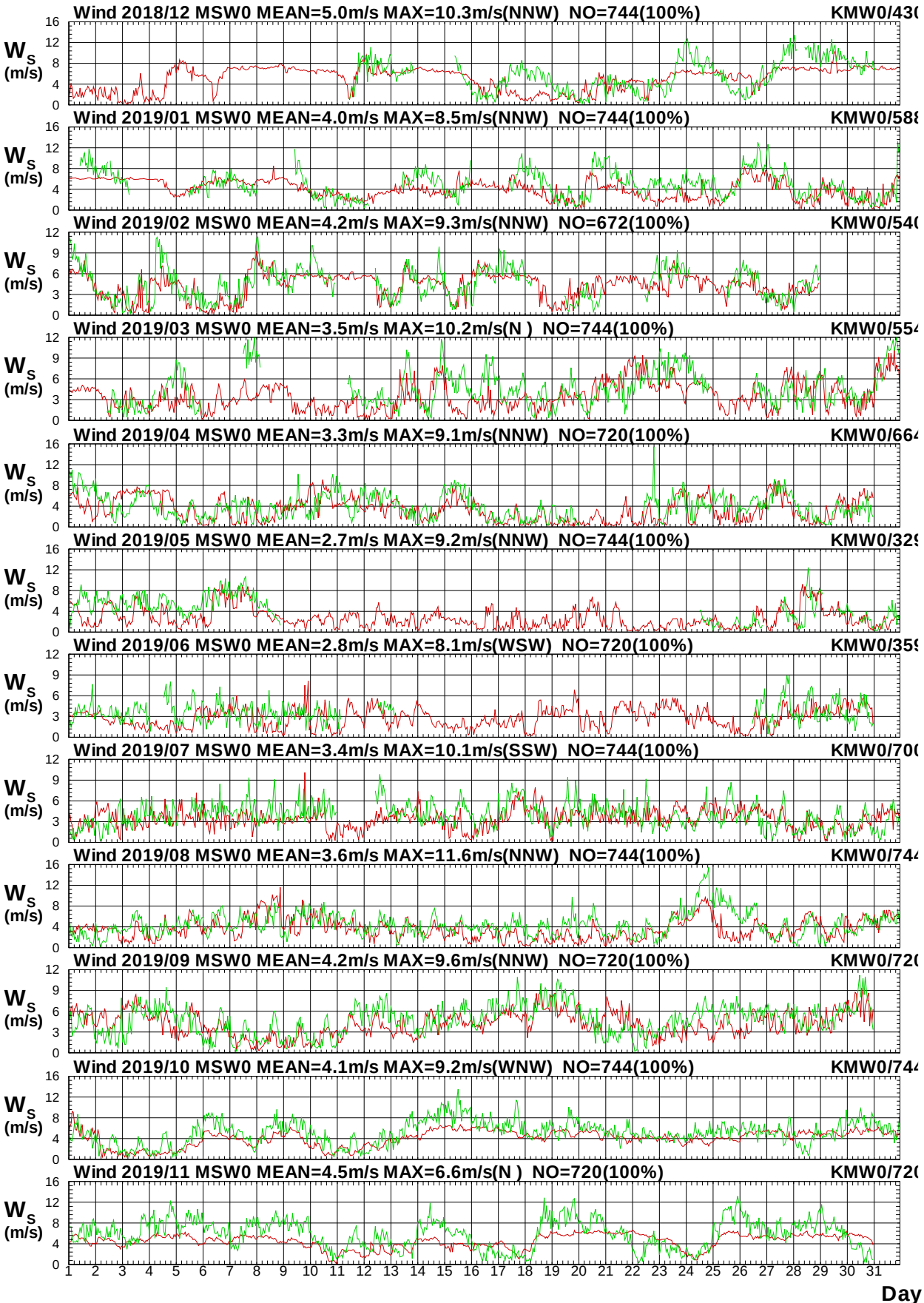


圖1.4.8a　2019年每月馬祖海域 W 站與金門海域 W 站風速圖

W18CMSW0.1HA W18CKMW0.1H0 W191MSW0.1HA W191KMW0.1H0 W192MSW0.1HA W192KMW0.1H0
W193MSW0.1HA W193KMW0.1H0 W194MSW0.1HA W194KMW0.1H0 W195MSW0.1HA W195KMW0.1H0

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Wind Direction in Ma-Tsu Seas of MSW0 at 2019

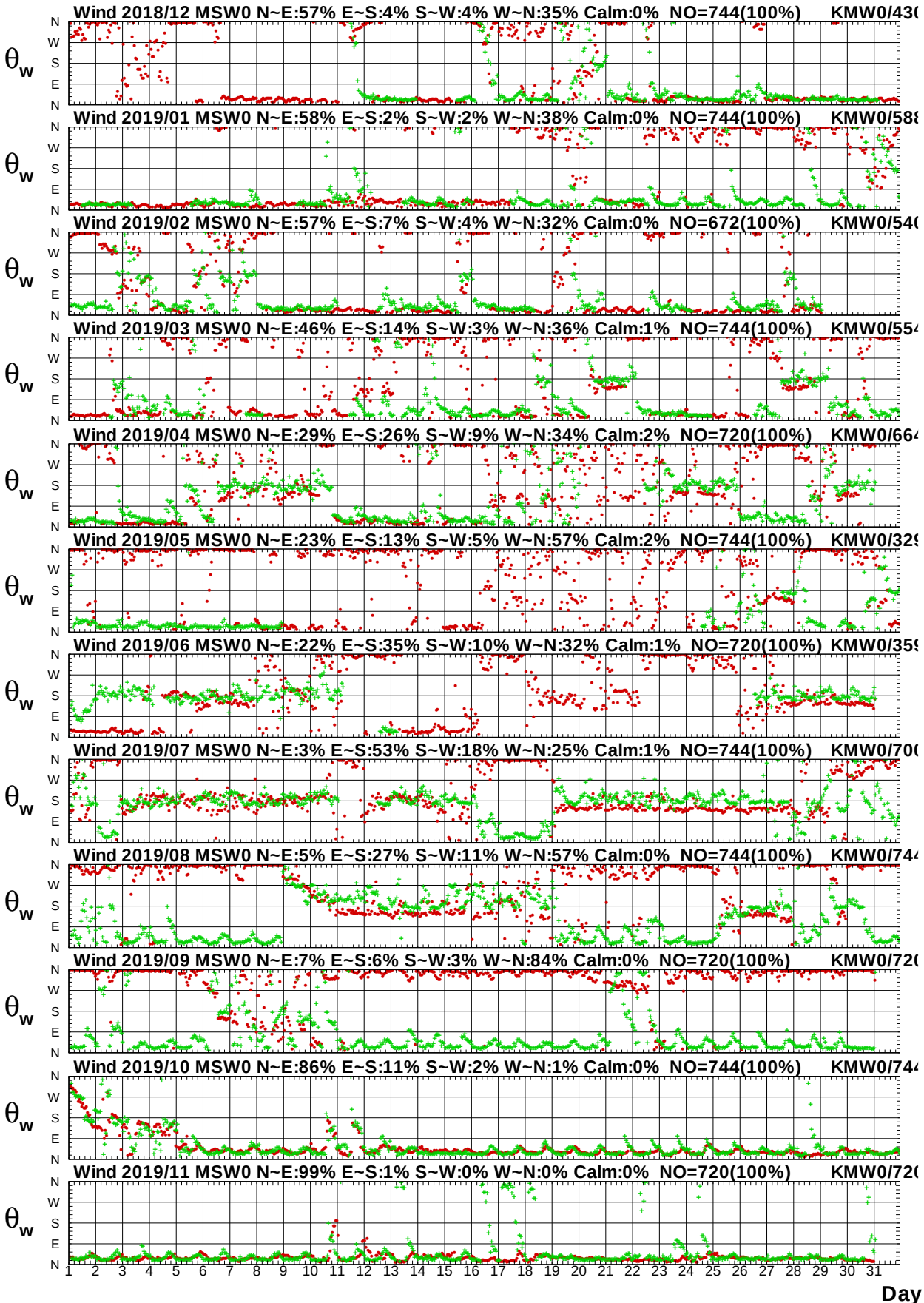


圖1.4.8b　2019年每月馬祖海域 W 站與金門海域 W 站風向圖

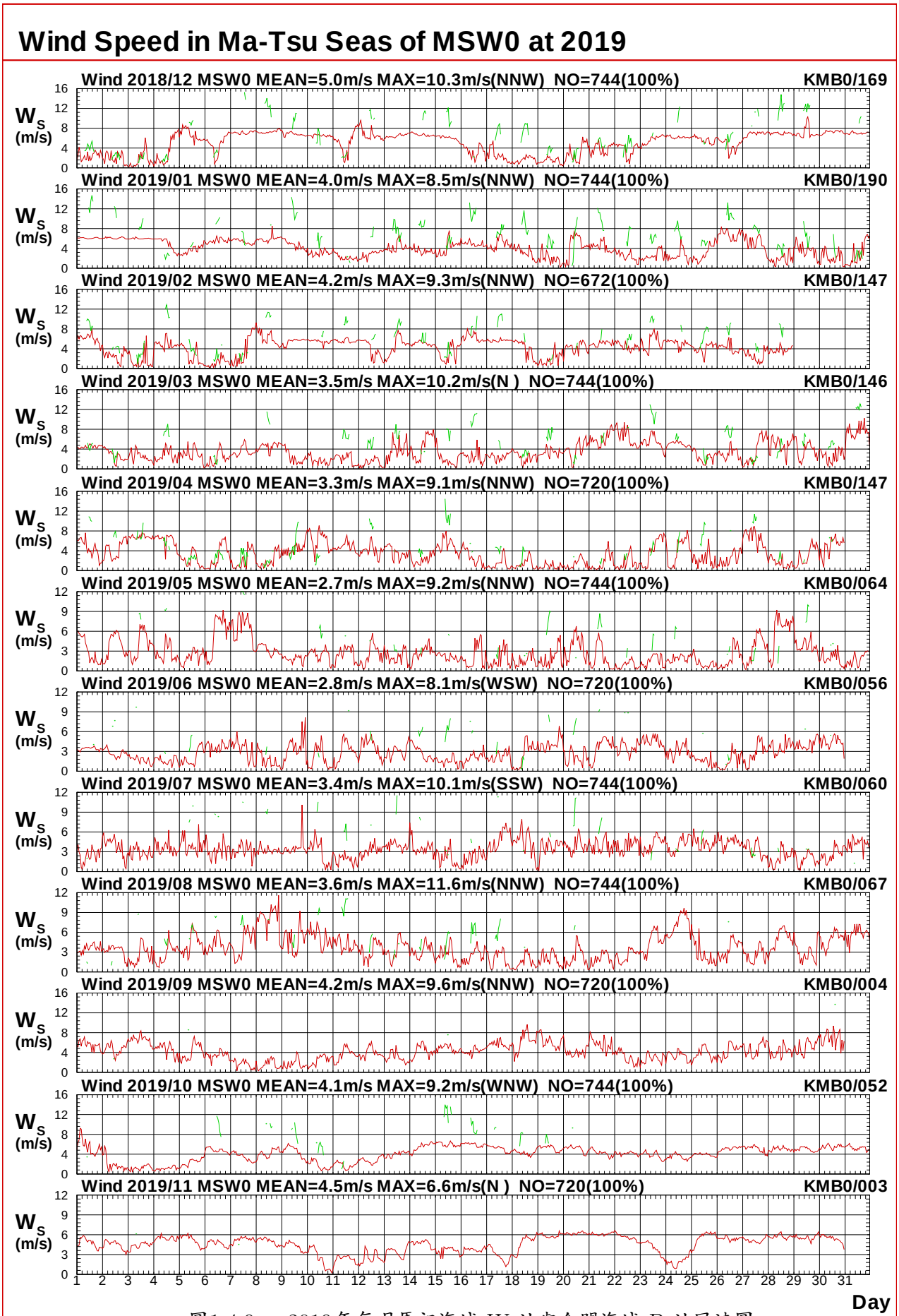


圖1.4.9a　2019年每月馬祖海域 W 站與金門海域 B 站風速圖

W18CMSW0.1HA W18CKMB0.1H0 W191MSW0.1HA W191KMB0.1H0 W192MSW0.1HA W192KMB0.1H0
W193MSW0.1HA W193KMB0.1H0 W194MSW0.1HA W194KMB0.1H0 W195MSW0.1HA W195KMB0.1H0

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Wind Direction in Ma-Tsu Seas of MSW0 at 2019

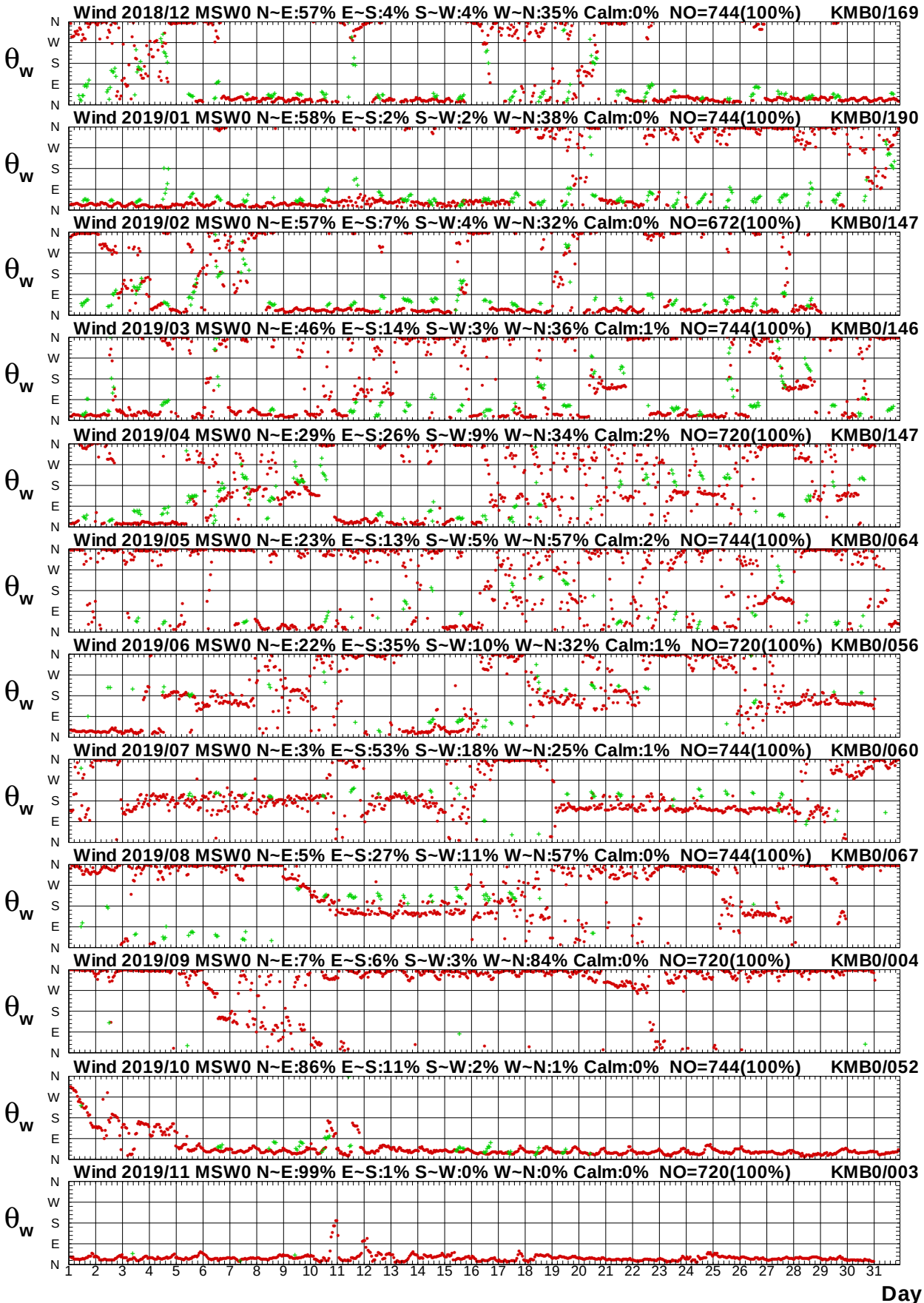


圖1.4.9b　2019年每月馬祖海域 W 站與金門海域 B 站風向圖

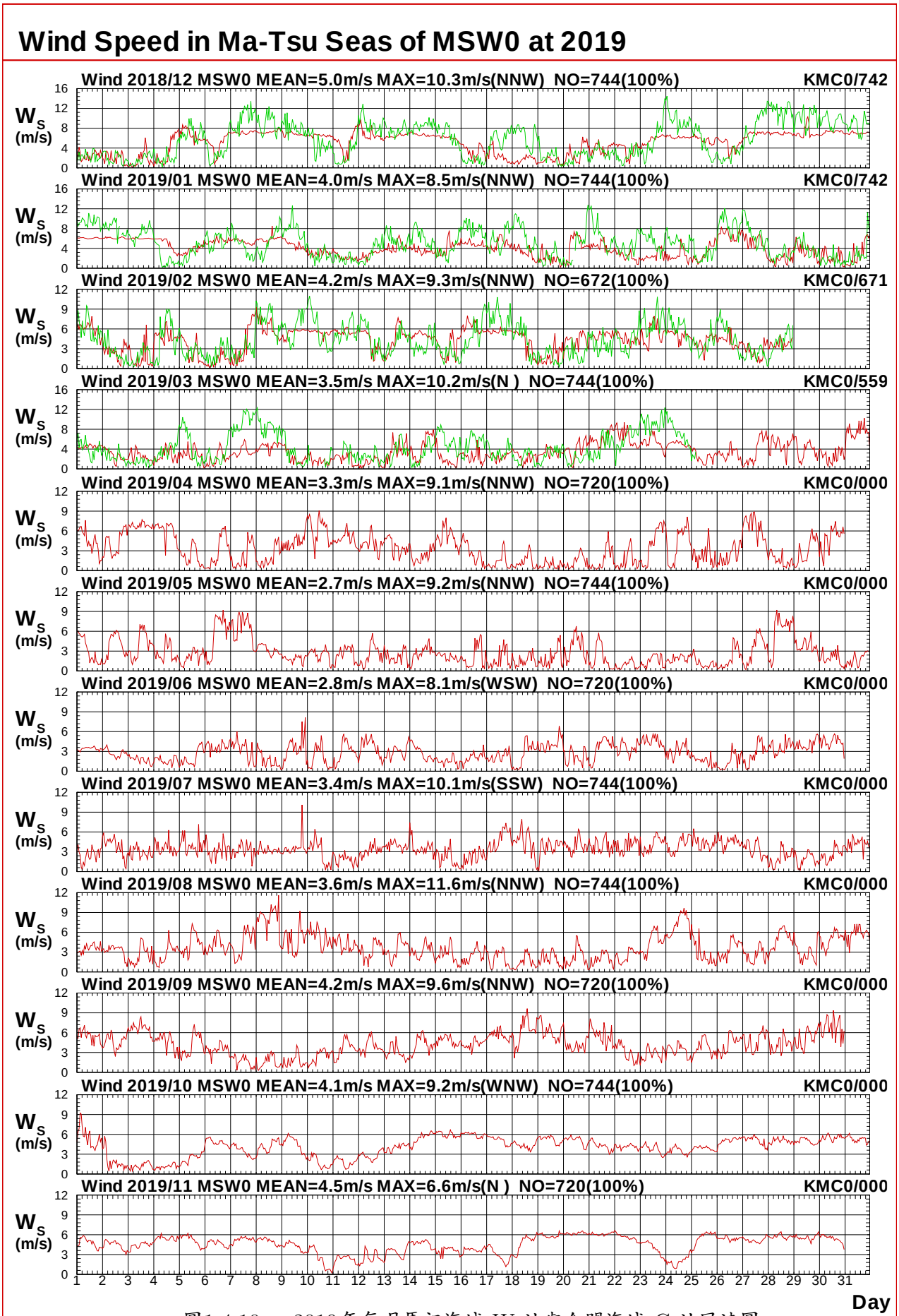


圖1.4.10a　2019年每月馬祖海域 W 站與金門海域 C 站風速圖

Wind Direction in Ma-Tsu Seas of MSW0 at 2019

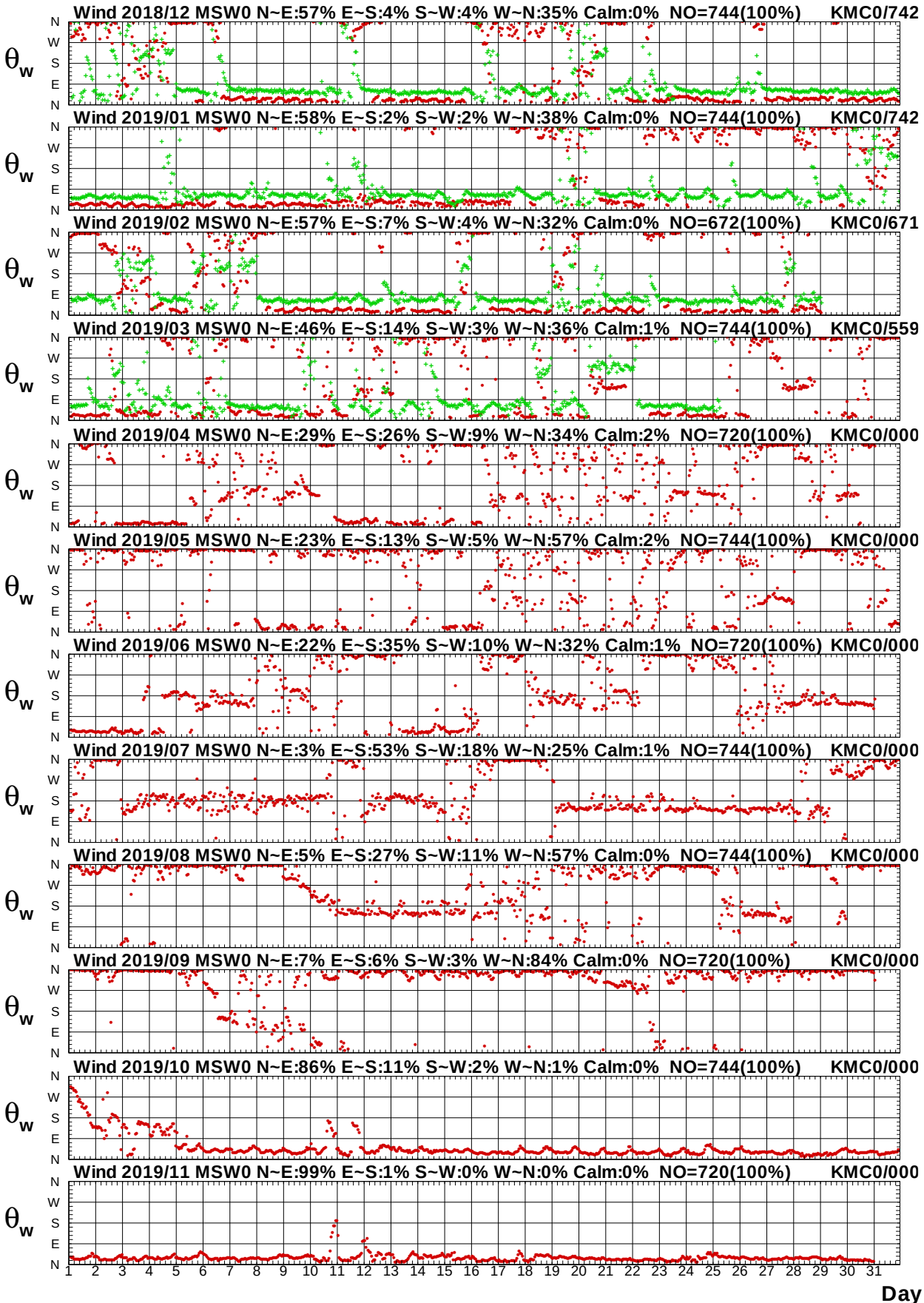


圖1.4.10b　2019年每月馬祖海域 W 站與金門海域 C 站風向圖

W18CMSW0.1HA W18CKMC0.1H0 W191MSW0.1HA W191KMC0.1H0 W192MSW0.1HA W192KMC0.1H0
W193MSW0.1HA W193KMC0.1H0 W194MSW0.1HA W194KMC0.1H0 W195MSW0.1HA W195KMC0.1H0

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Wind Speed in Ma-Tsu Seas of MSW0 at 2019

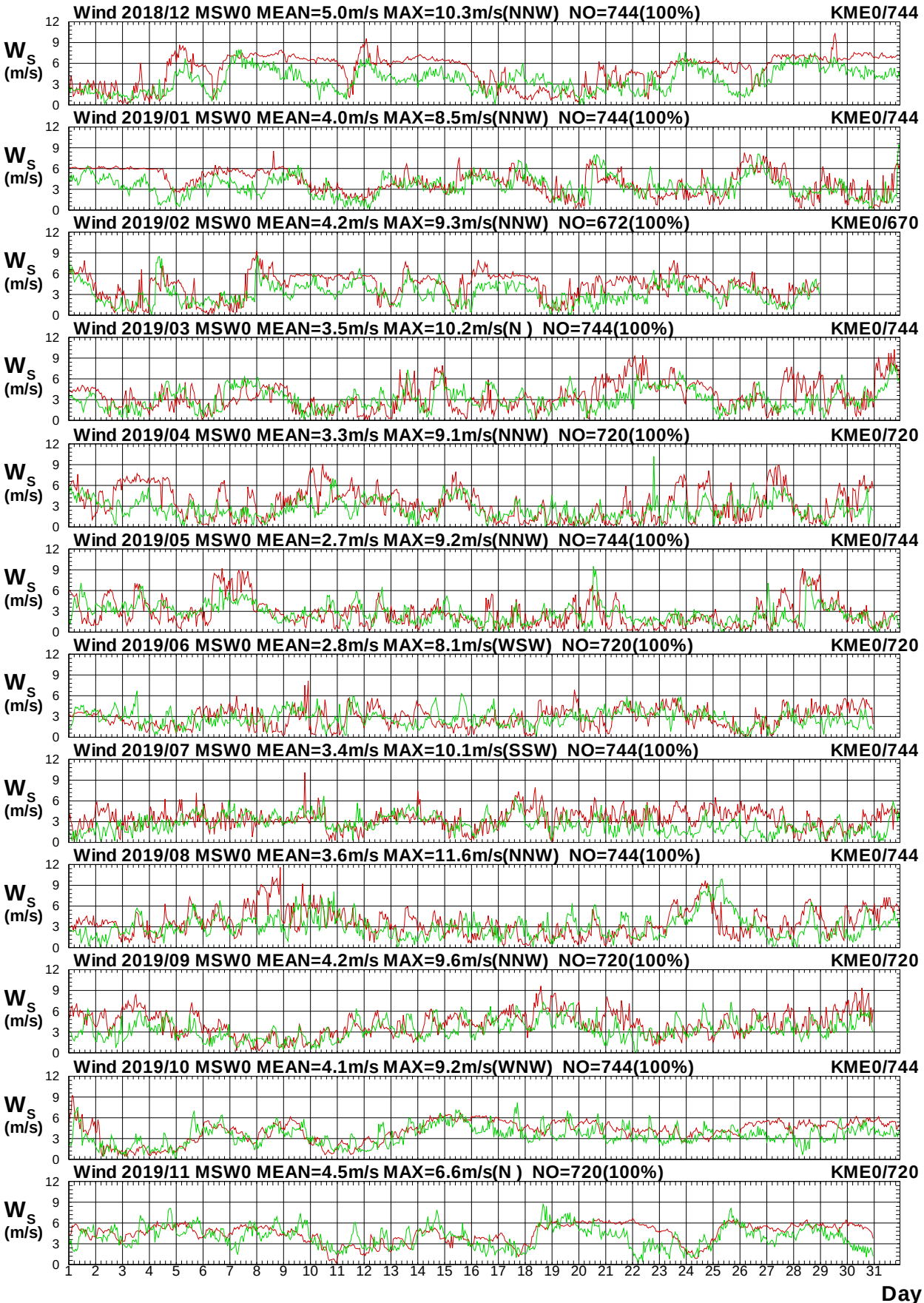


圖1.4.11a　2019年每月馬祖海域 W 站與金門海域 E 站風速圖

W18CMSW0.1HA W18CKME0.1H0 W191MSW0.1HA W191KME0.1H0 W192MSW0.1HA W192KME0.1H0
W193MSW0.1HA W193KME0.1H0 W194MSW0.1HA W194KME0.1H0 W195MSW0.1HA W195KME0.1H0

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Wind Direction in Ma-Tsu Seas of MSW0 at 2019

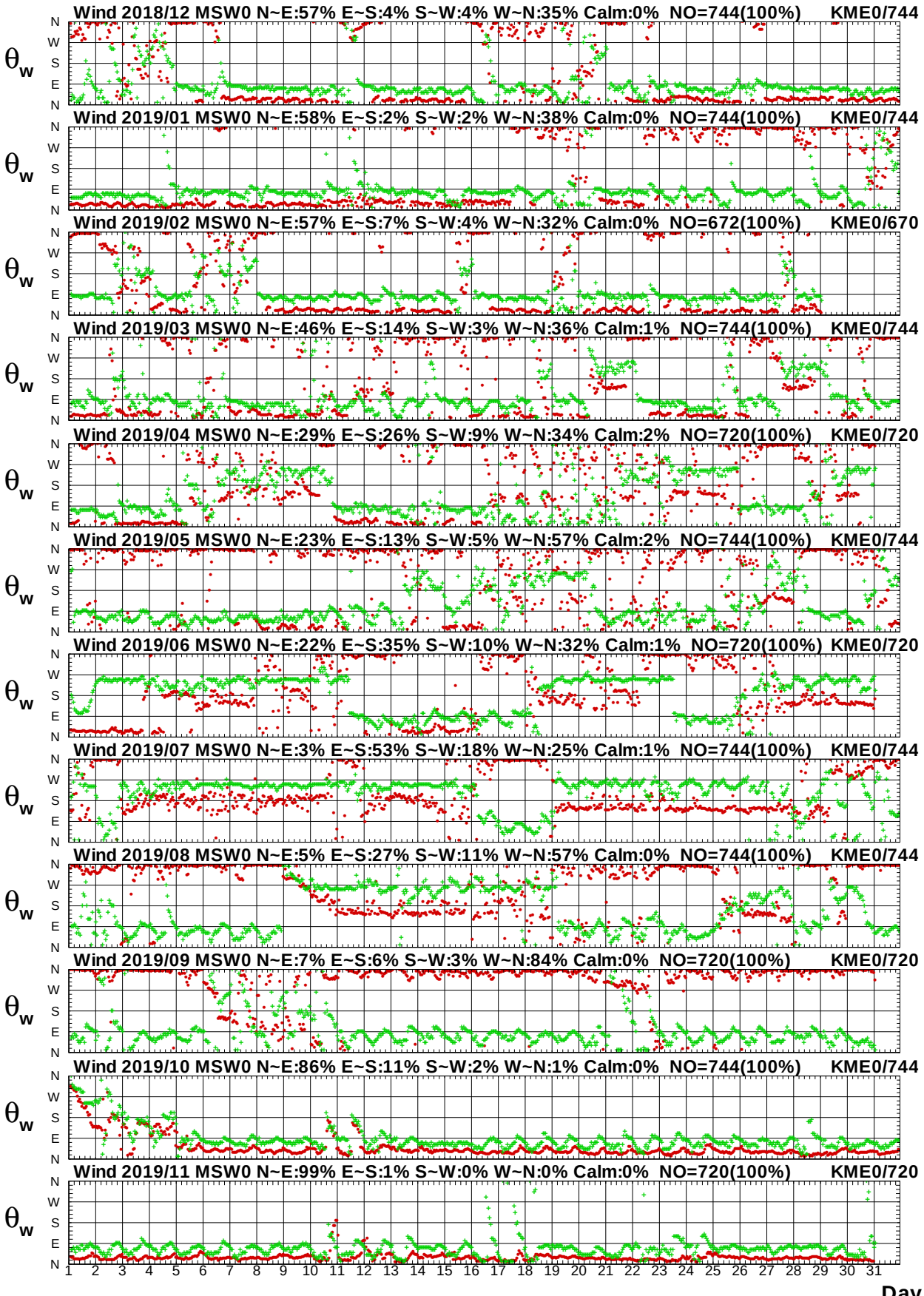


圖1.4.11b　2019年每月馬祖海域 W 站與金門海域 E 站風向圖

W18CMSW0.1HA W18CKME0.1H0 W191MSW0.1HA W191KME0.1H0 W192MSW0.1HA W192KME0.1H0
W193MSW0.1HA W193KME0.1H0 W194MSW0.1HA W194KME0.1H0 W195MSW0.1HA W195KME0.1H0

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Wind Speed in Ma-Tsu Seas of MSW0 at 2019

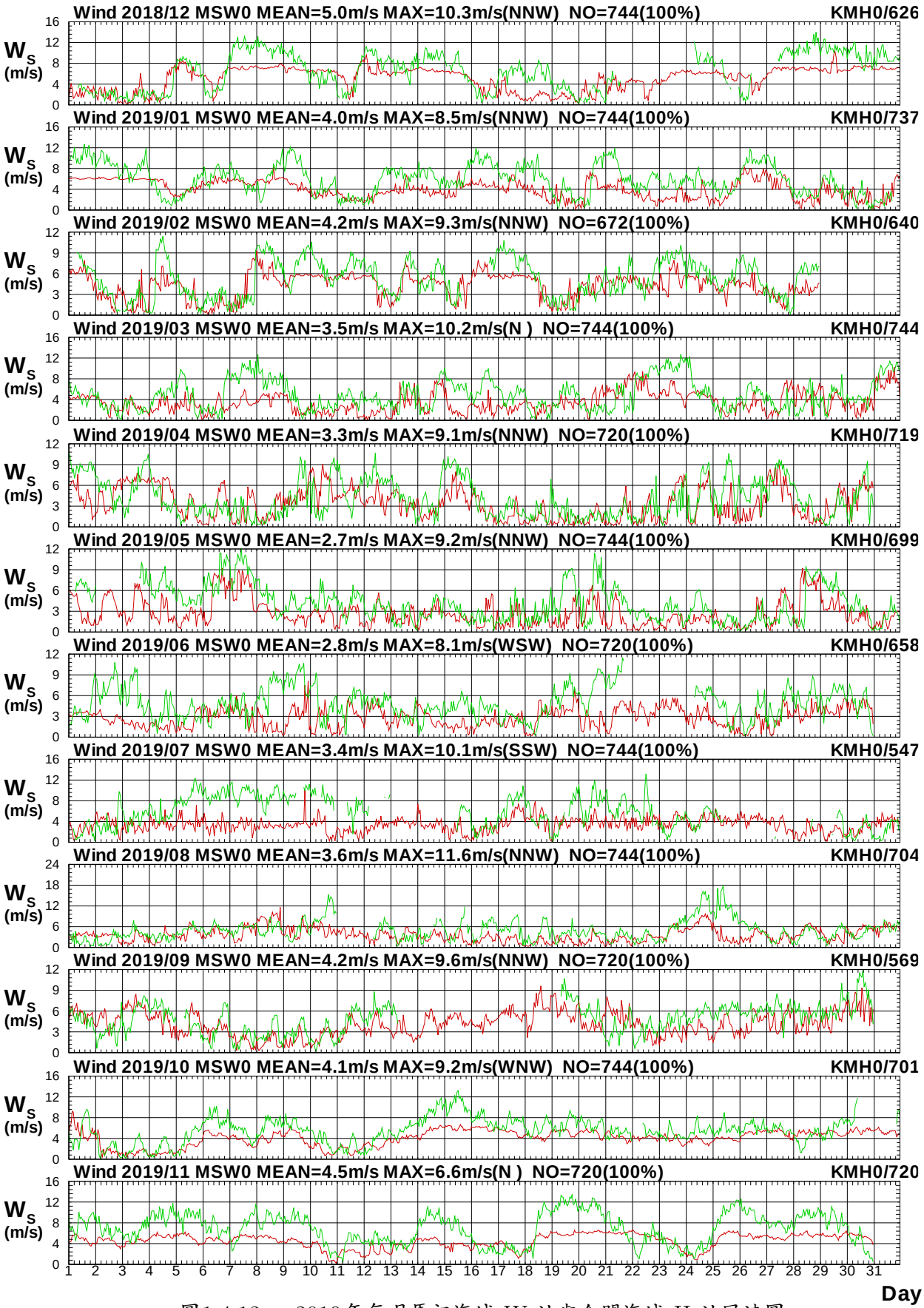


圖1.4.12a　2019年每月馬祖海域 W 站與金門海域 H 站風速圖

W18CMSW0.1HA W18CKMH0.1H0 W191MSW0.1HA W191KMH0.1H0 W192MSW0.1HA W192KMH0.1H0
W193MSW0.1HA W193KMH0.1H0 W194MSW0.1HA W194KMH0.1H0 W195MSW0.1HA W195KMH0.1H0

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Wind Direction in Ma-Tsu Seas of MSW0 at 2019

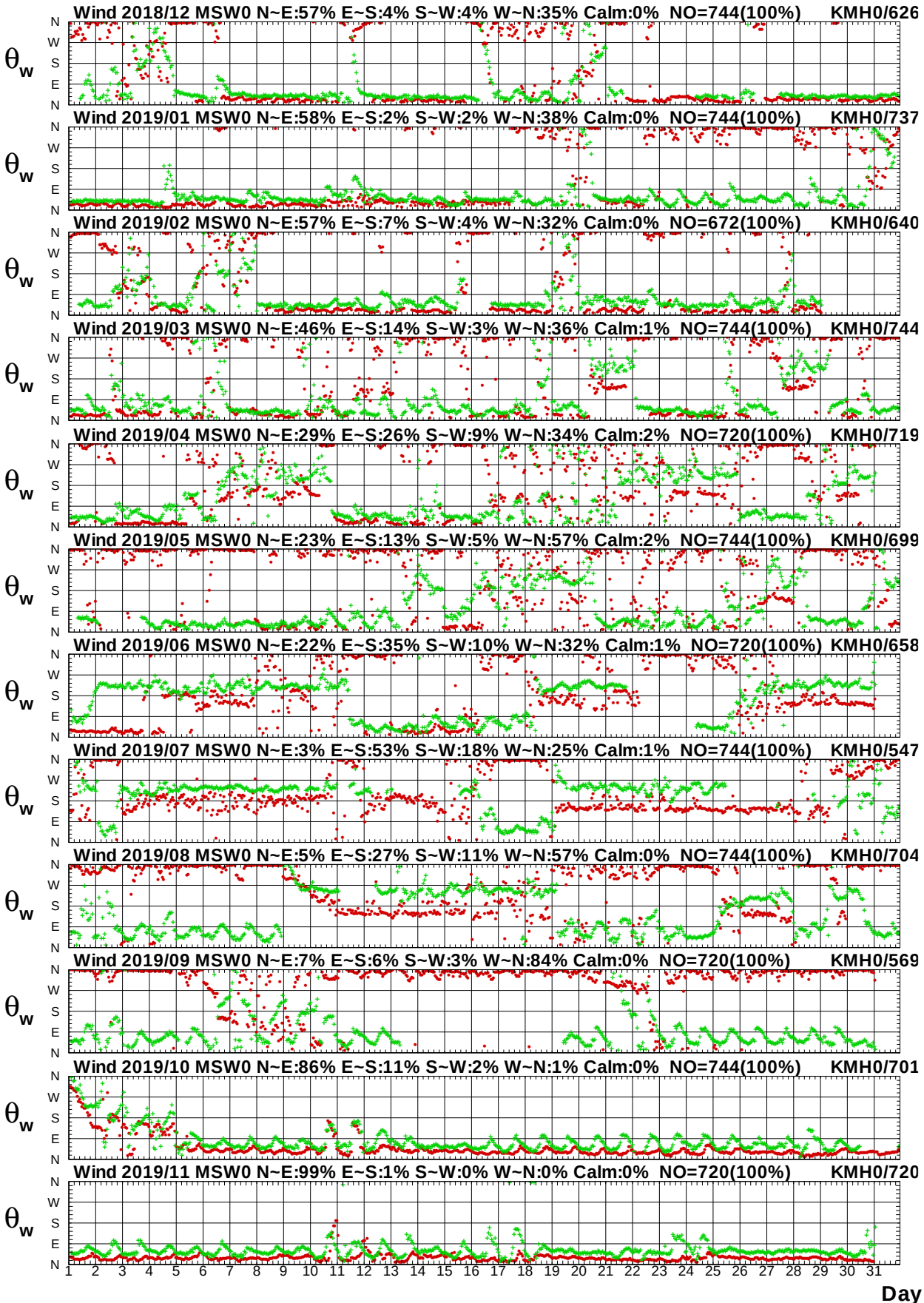


圖1.4.12b　2019年每月馬祖海域 W 站與金門海域 H 站風向圖

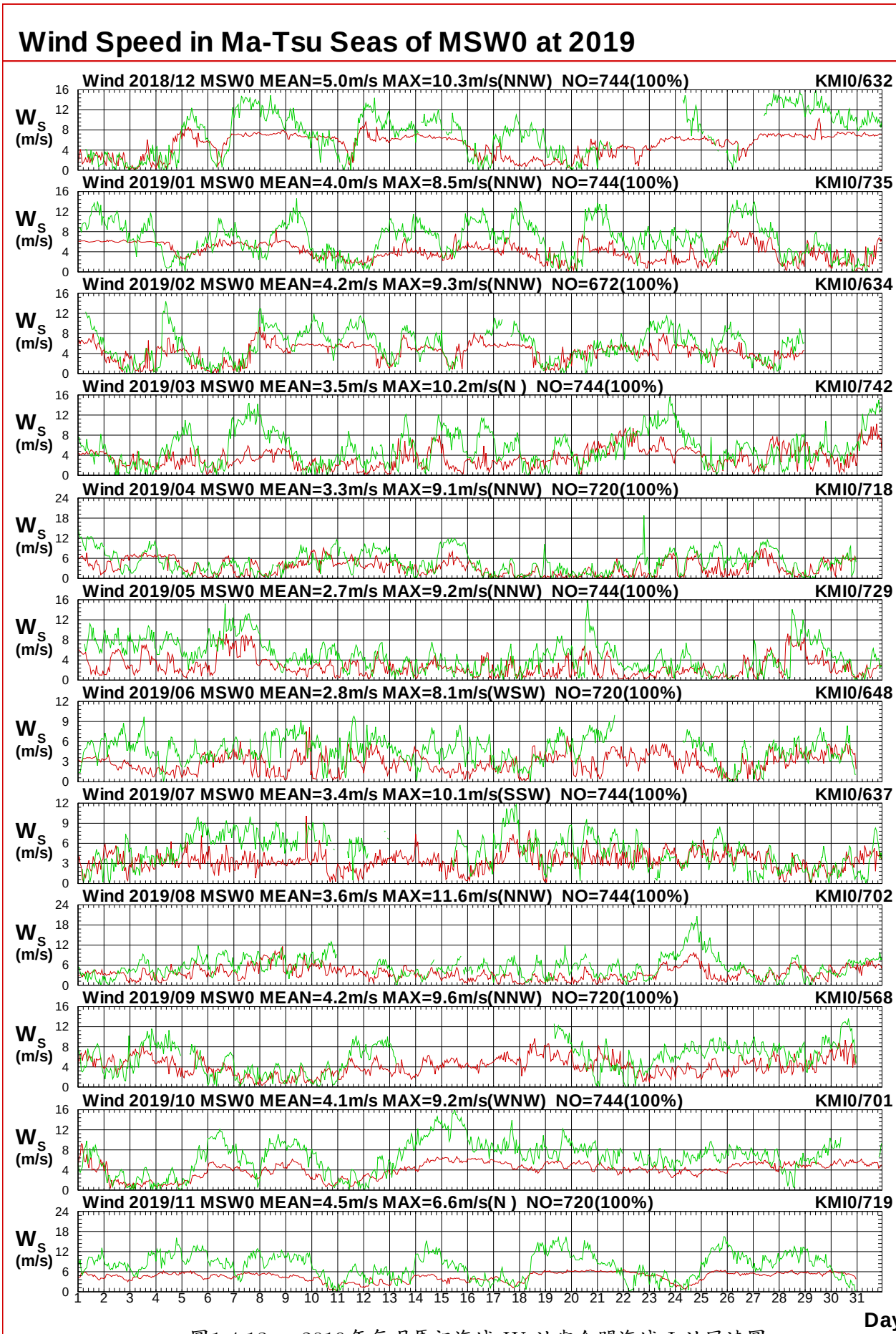


圖1.4.13a　2019年每月馬祖海域 W 站與金門海域 I 站風速圖

Wind Direction in Ma-Tsu Seas of MSW0 at 2019

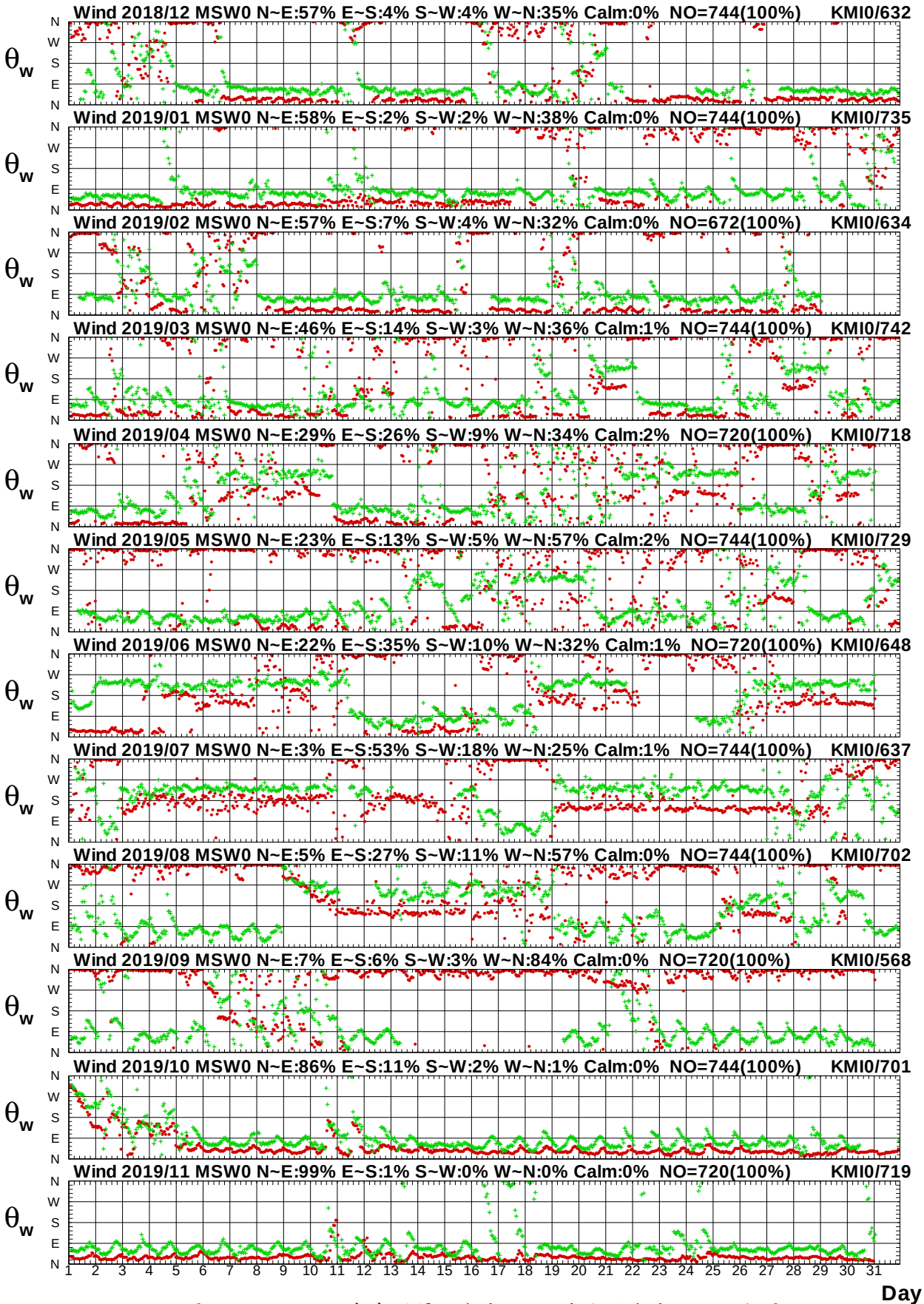


圖1.4.13b　2019年每月馬祖海域 W 站與金門海域 I 站風向圖

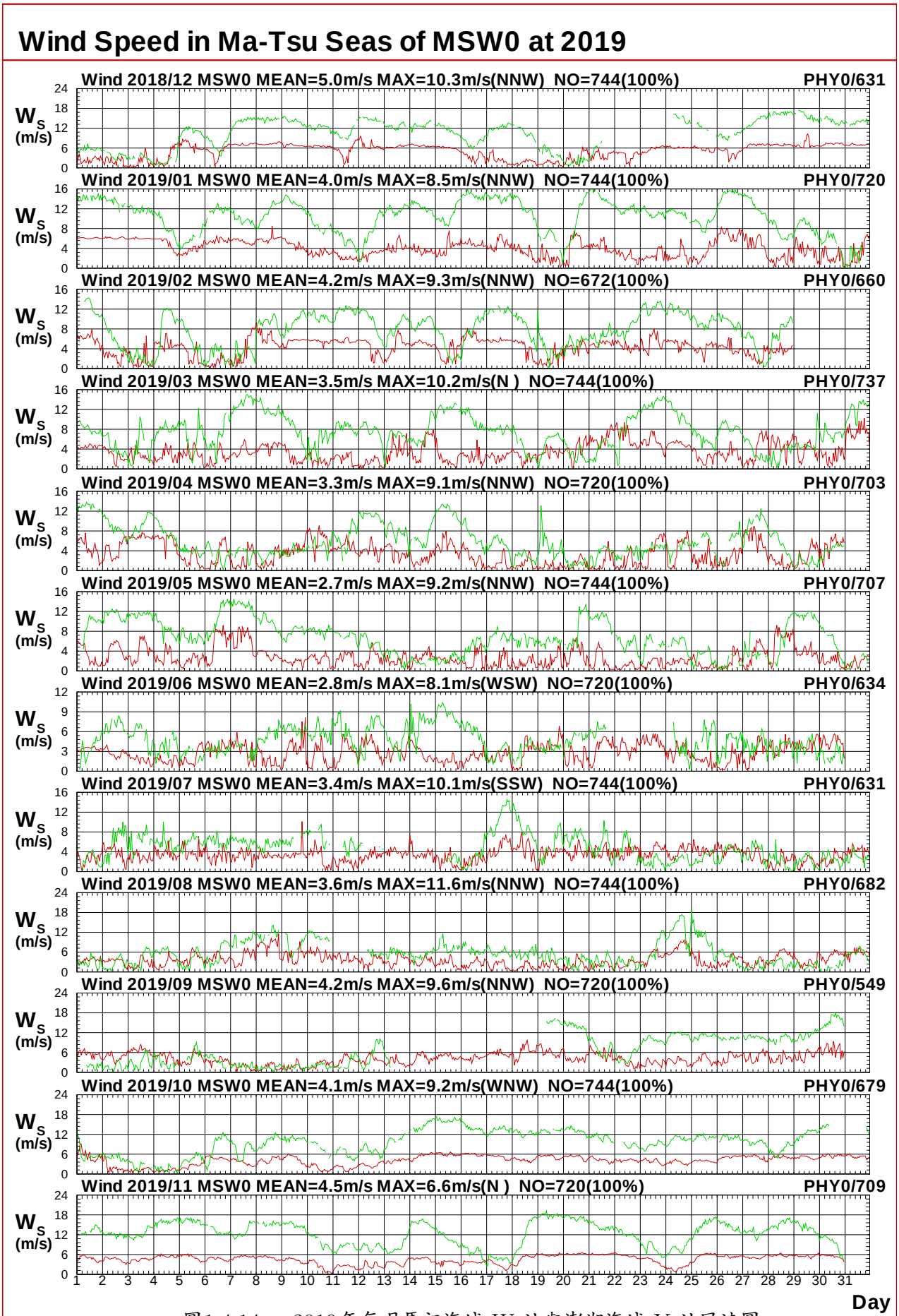


圖1.4.14a　2019年每月馬祖海域 W 站與澎湖海域 Y 站風速圖

W18CMSW0.1HA W18CPHY0.1H0 W191MSW0.1HA W191PHY0.1H0 W192MSW0.1HA W192PHY0.1H0
W193MSW0.1HA W193PHY0.1H0 W194MSW0.1HA W194PHY0.1H0 W195MSW0.1HA W195PHY0.1H0

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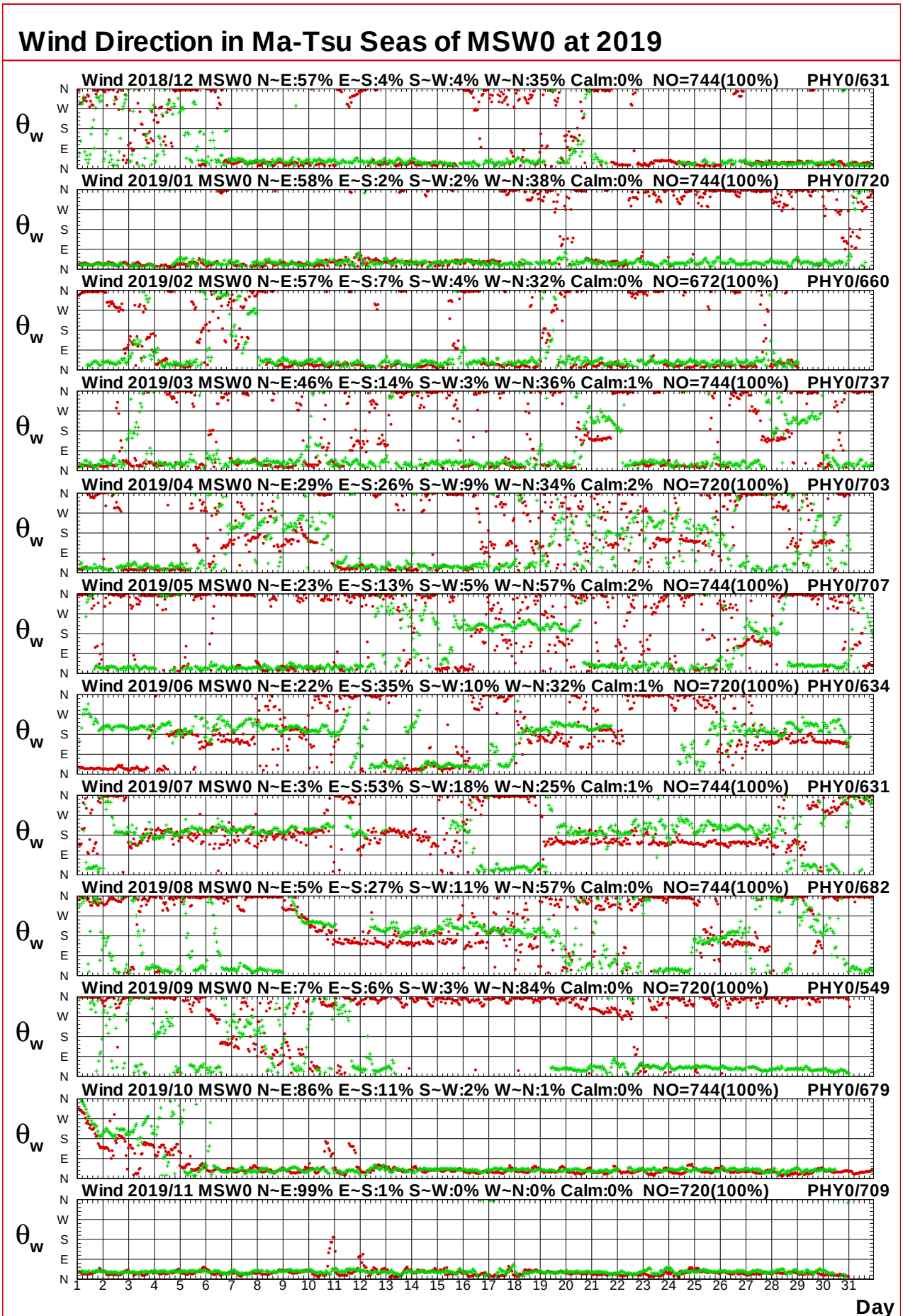


圖1.4.14b　2019年每月馬祖海域 W 站與澎湖海域 Y 站風向圖

Wind Speed in Ma-Tsu Seas of MSW0 at 2019

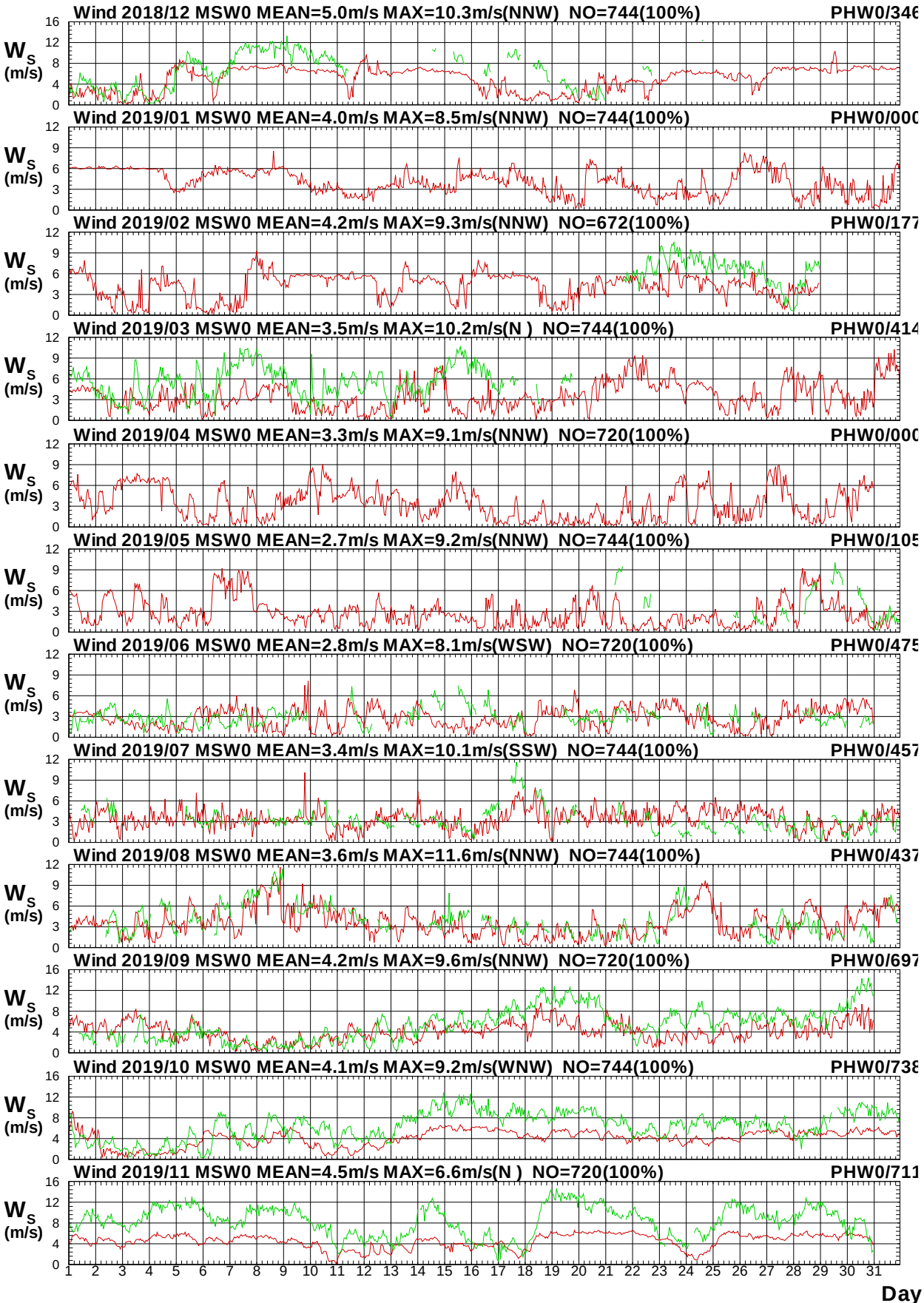


圖1.4.15a　2019年每月馬祖海域 W 站與澎湖海域 W 站風速圖

W18CMSW0.1HA W18CPHW0.1H0 W191MSW0.1HA W191PHW0.1H0 W192MSW0.1HA W192PHW0.1H0
W193MSW0.1HA W193PHW0.1H0 W194MSW0.1HA W194PHW0.1H0 W195MSW0.1HA W195PHW0.1H0

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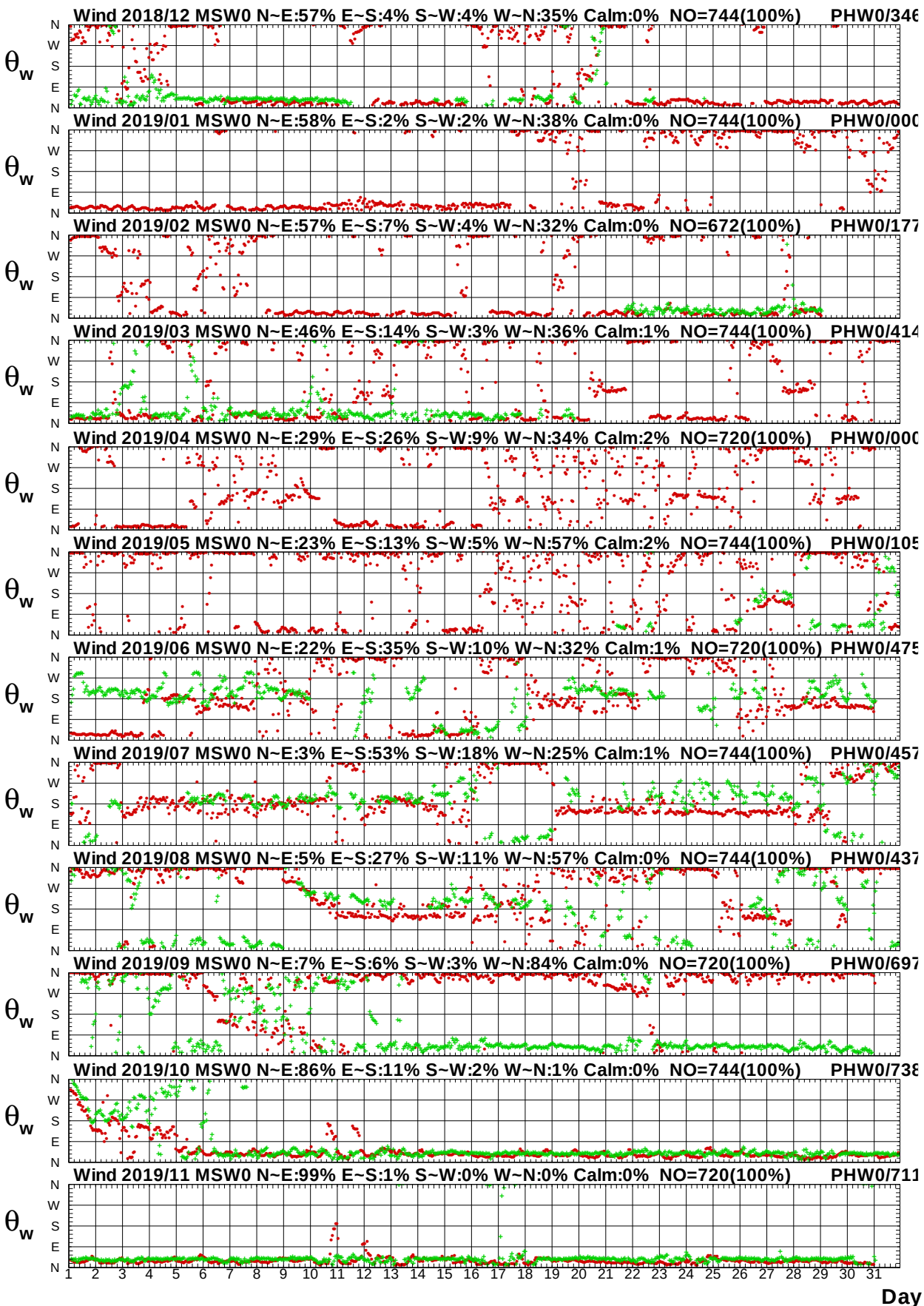


圖1.4.15b　2019年每月馬祖海域 W 站與澎湖海域 W 站風向圖

Wind Speed in Ma-Tsu Seas of MSW0 at 2019

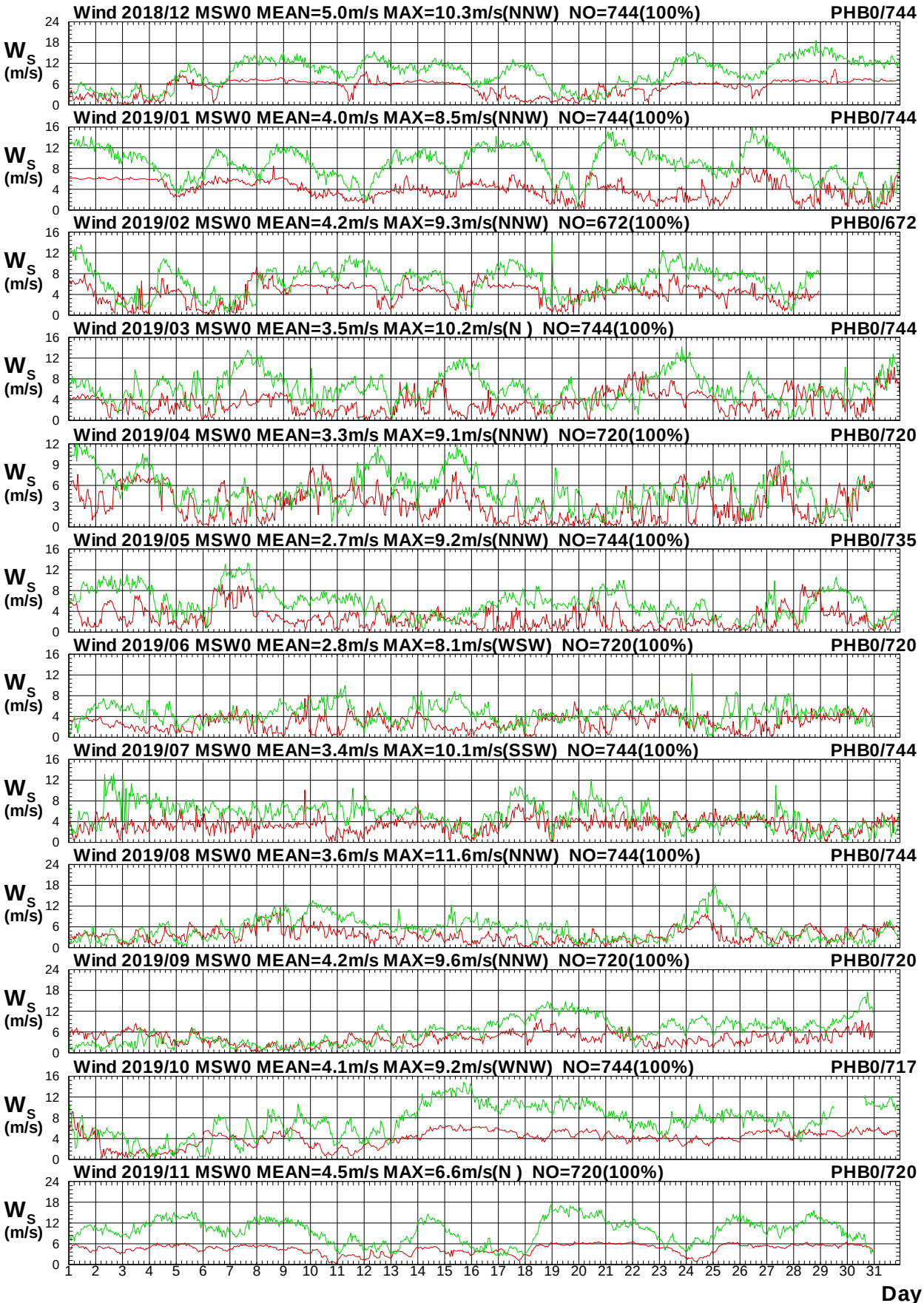


圖1.4.16a　2019年每月馬祖海域 W 站與澎湖海域 B 站風速圖

W18CMSW0.1HA W18CPHB0.1H0 W191MSW0.1HA W191PHB0.1H0 W192MSW0.1HA W192PHB0.1H0
W193MSW0.1HA W193PHB0.1H0 W194MSW0.1HA W194PHB0.1H0 W195MSW0.1HA W195PHB0.1H0

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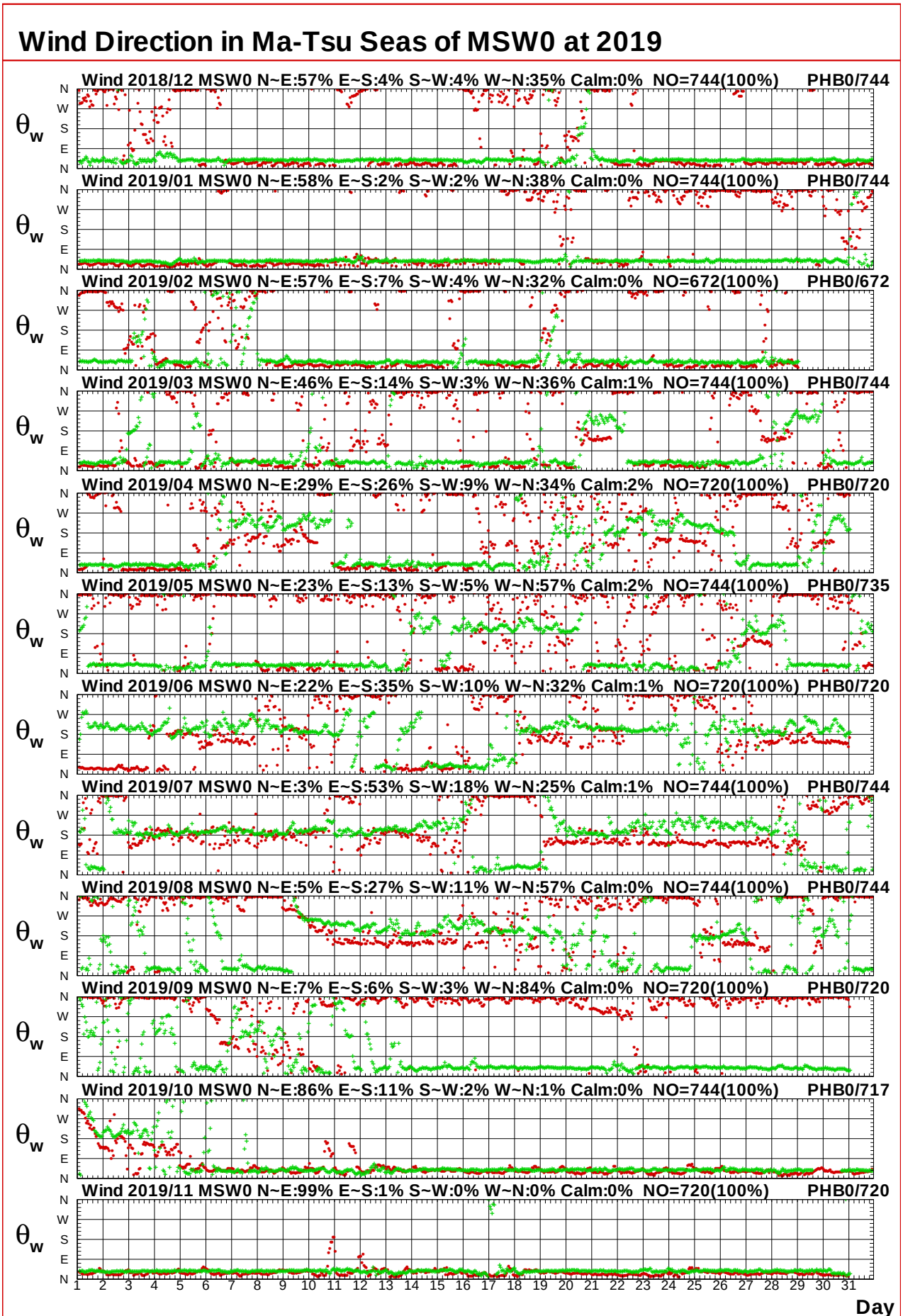


圖1.4.16b　2019年每月馬祖海域 W 站與澎湖海域 B 站風向圖

Wind Speed in Ma-Tsu Seas of MSW0 at 2019

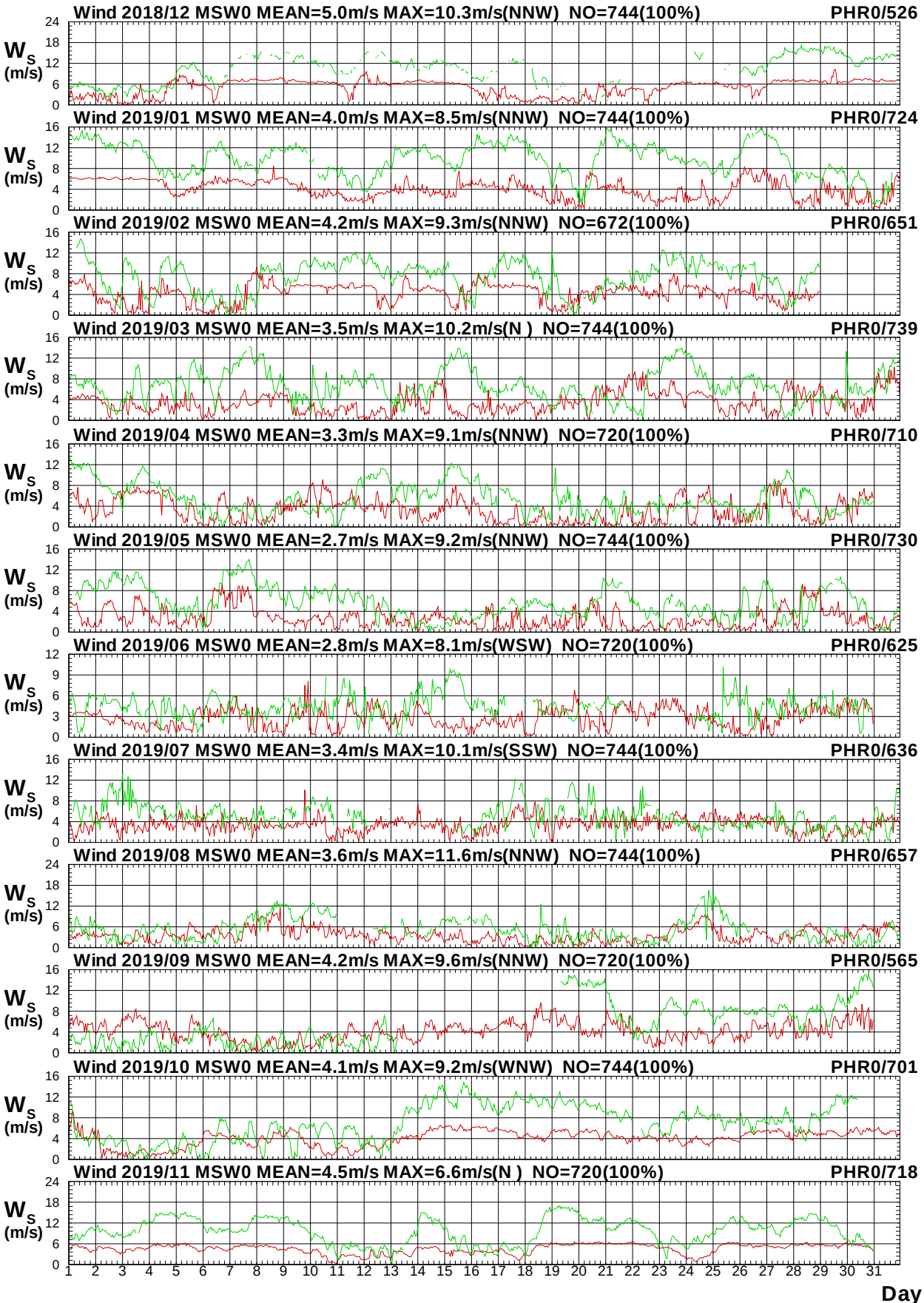


圖1.4.17a　2019年每月馬祖海域 W 站與澎湖海域 R 站風速圖

W18CMSW0.1HA W18CPHR0.1H0 W191MSW0.1HA W191PHR0.1H0 W192MSW0.1HA W192PHR0.1H0
W193MSW0.1HA W193PHR0.1H0 W194MSW0.1HA W194PHR0.1H0 W195MSW0.1HA W195PHR0.1H0

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Wind Direction in Ma-Tsu Seas of MSW0 at 2019

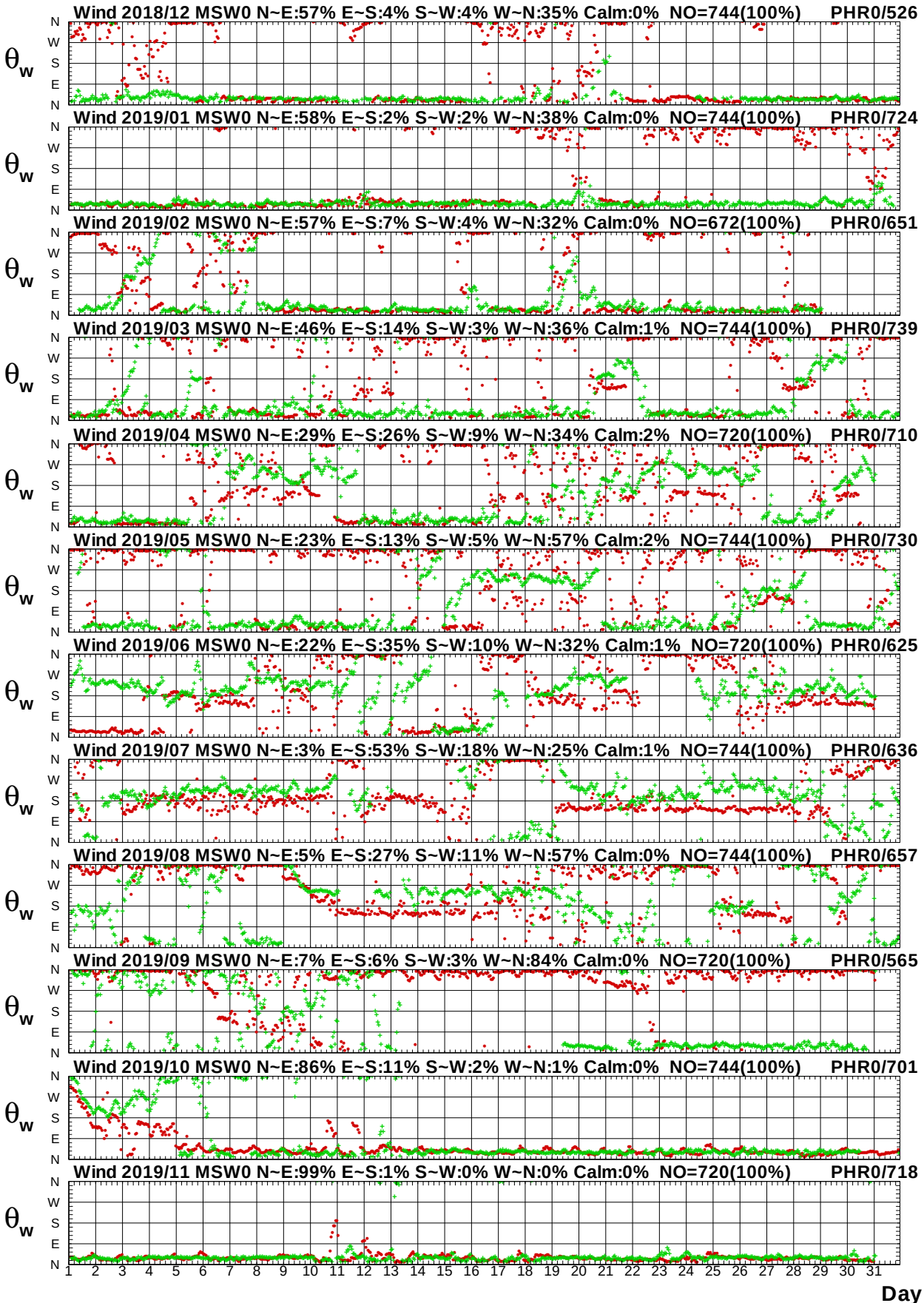


圖1.4.17b　2019年每月馬祖海域 W 站與澎湖海域 R 站風向圖

W18CMSW0.1HA W18CPHR0.1H0 W191MSW0.1HA W191PHR0.1H0 W192MSW0.1HA W192PHR0.1H0
W193MSW0.1HA W193PHR0.1H0 W194MSW0.1HA W194PHR0.1H0 W195MSW0.1HA W195PHR0.1H0

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Wind Speed in Ma-Tsu Seas of MSW0 at 2019

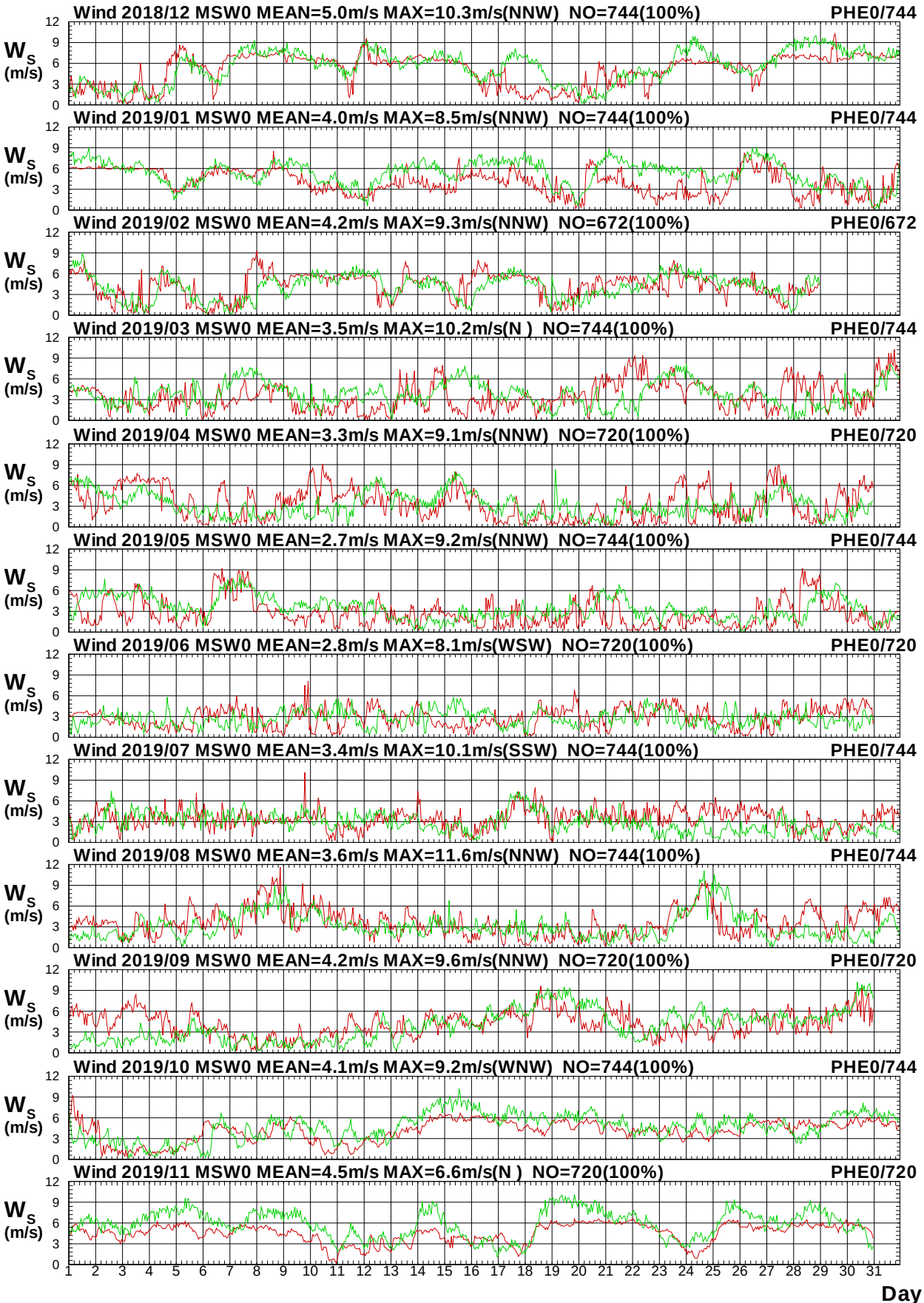


圖1.4.18a　2019年每月馬祖海域 W 站與澎湖海域 E 站風速圖

W18CMSW0.1HA W18CPHE0.1H0 W191MSW0.1HA W191PHE0.1H0 W192MSW0.1HA W192PHE0.1H0
W193MSW0.1HA W193PHE0.1H0 W194MSW0.1HA W194PHE0.1H0 W195MSW0.1HA W195PHE0.1H0

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Wind Direction in Ma-Tsu Seas of MSW0 at 2019

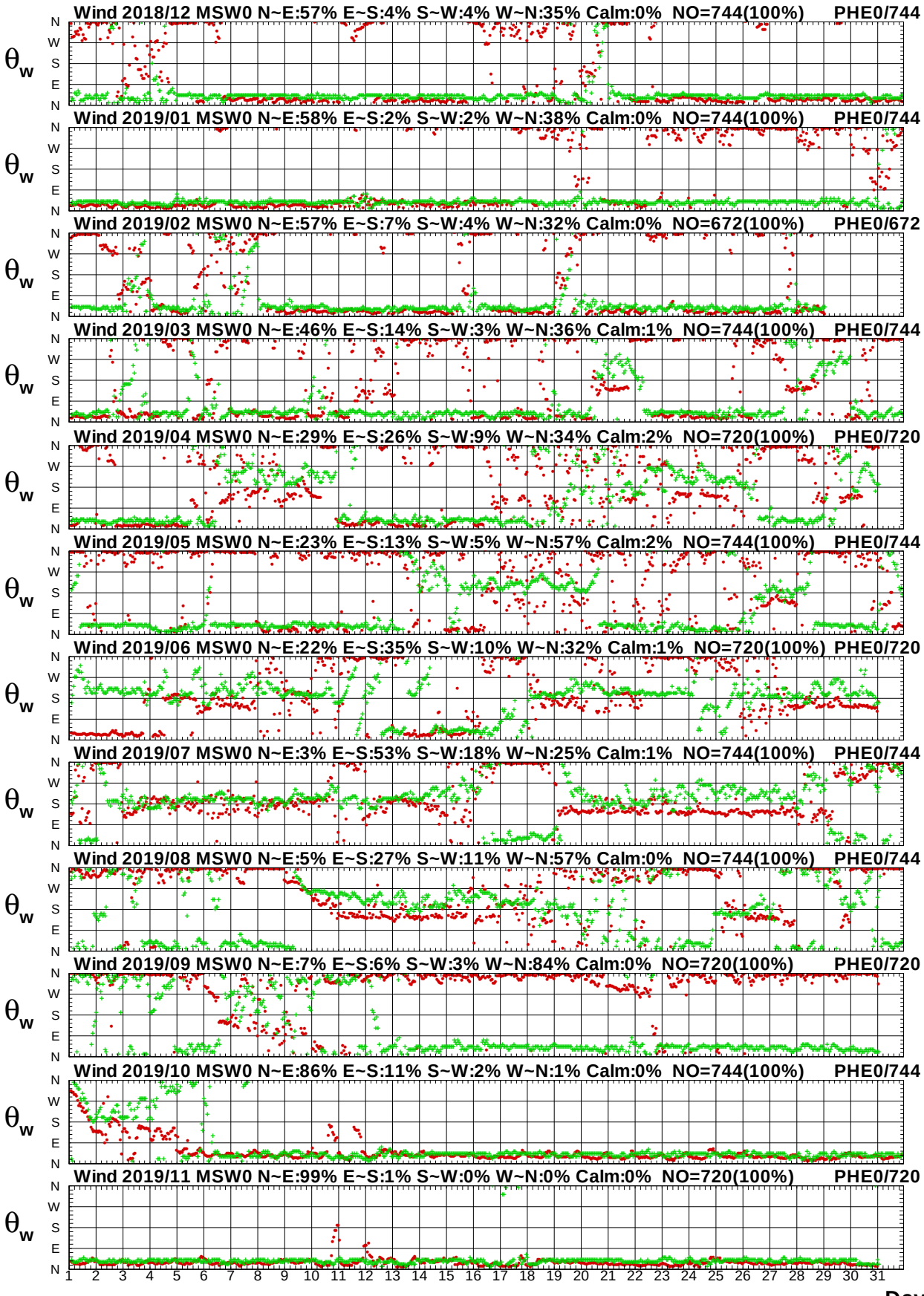


圖1.4.18b　2019年每月馬祖海域 W 站與澎湖海域 E 站風向圖

1.5　2019 年馬祖海域風力各測站修補前

風力向量分佈圖

Distribution of Wind Vectores

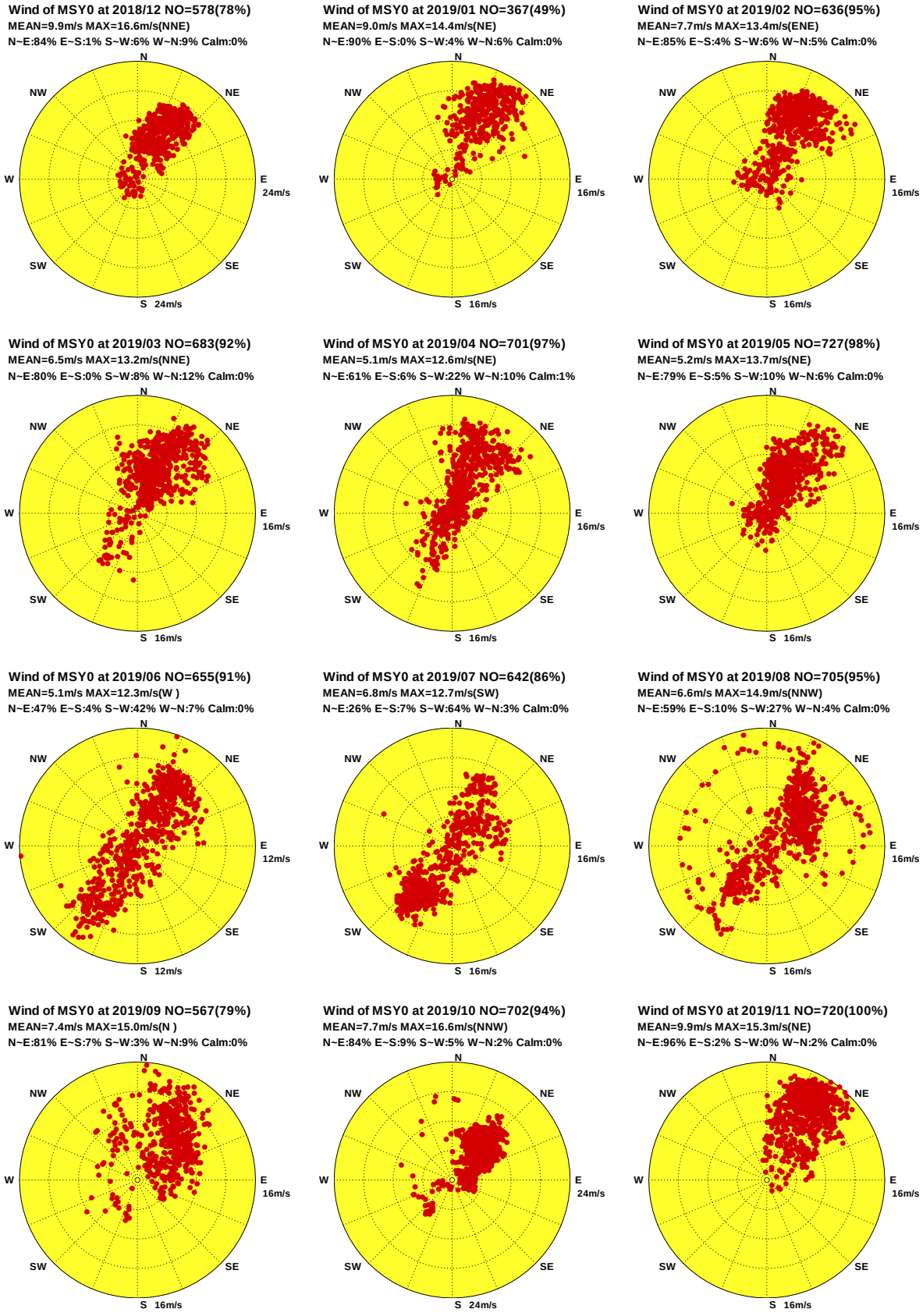


圖1.5.1 2019年馬祖海域每月 Y 站修補前觀測風力向量分佈圖

Distribution of Wind Vectores

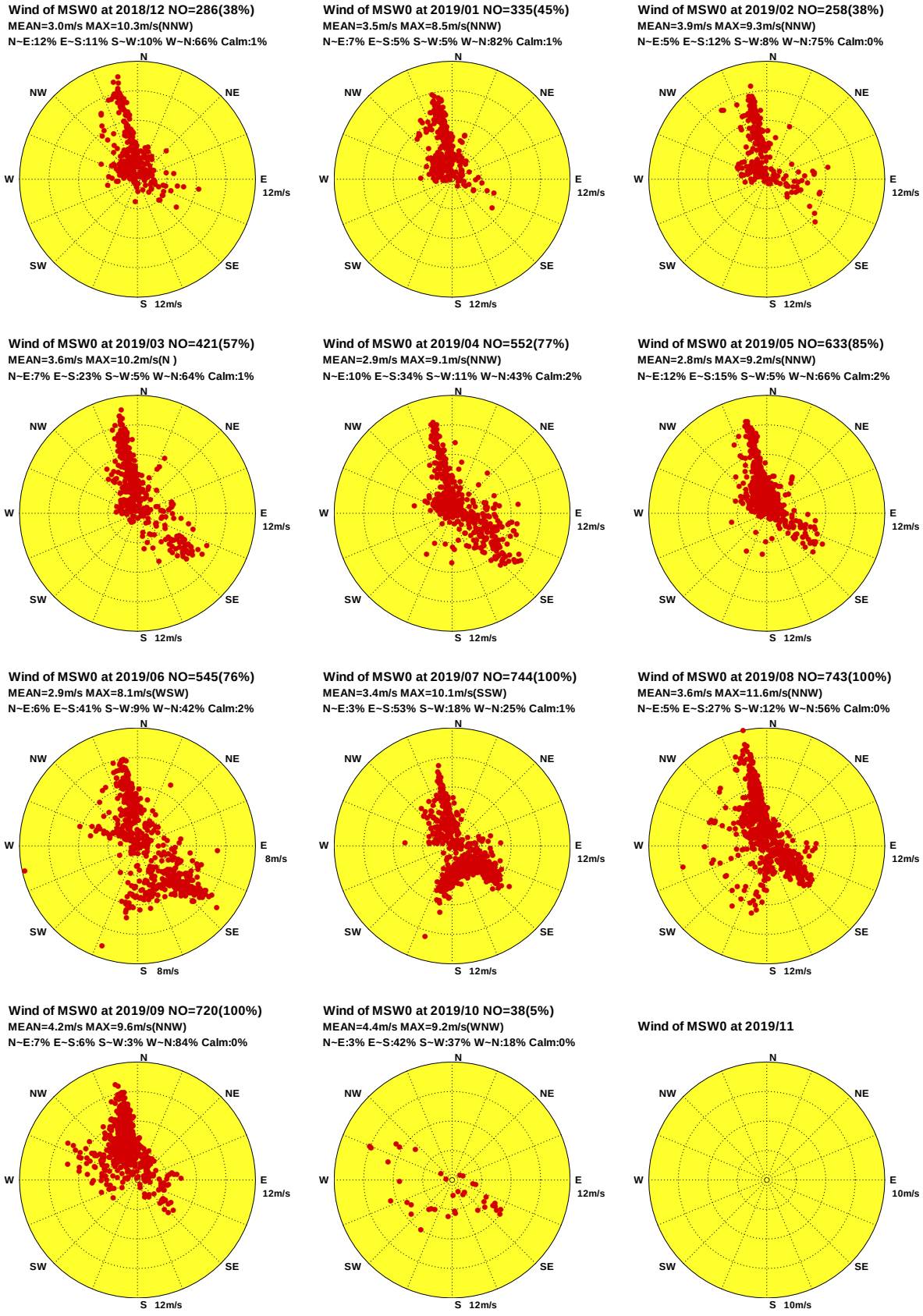


圖1.5.2 2019年馬祖海域每月 W 站修補前觀測風力向量分佈圖

Distribution of Wind Vectores

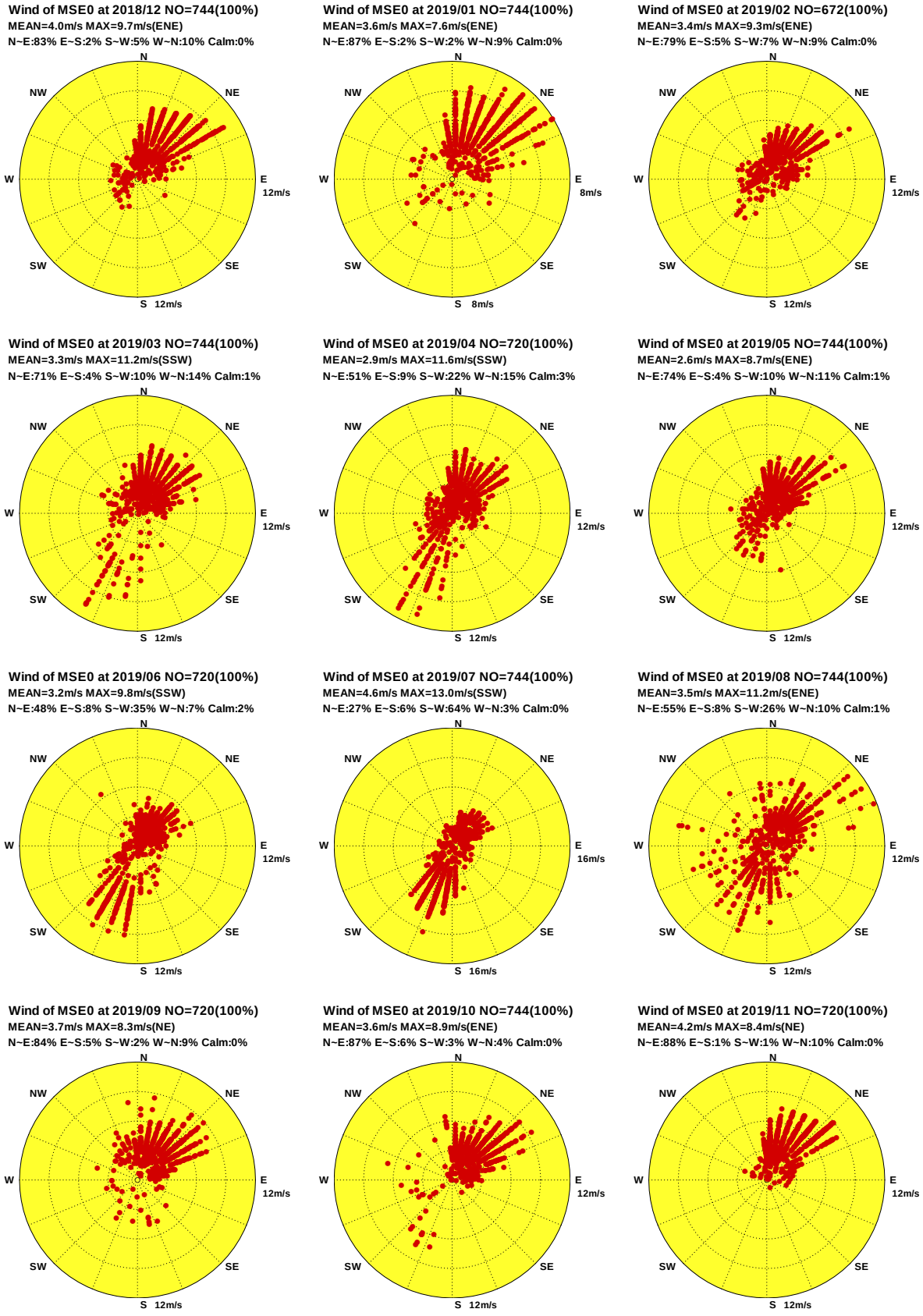


圖1.5.3 2019年馬祖海域每月 E 站修補前觀測風力向量分佈圖

Distribution of Wind Vectores

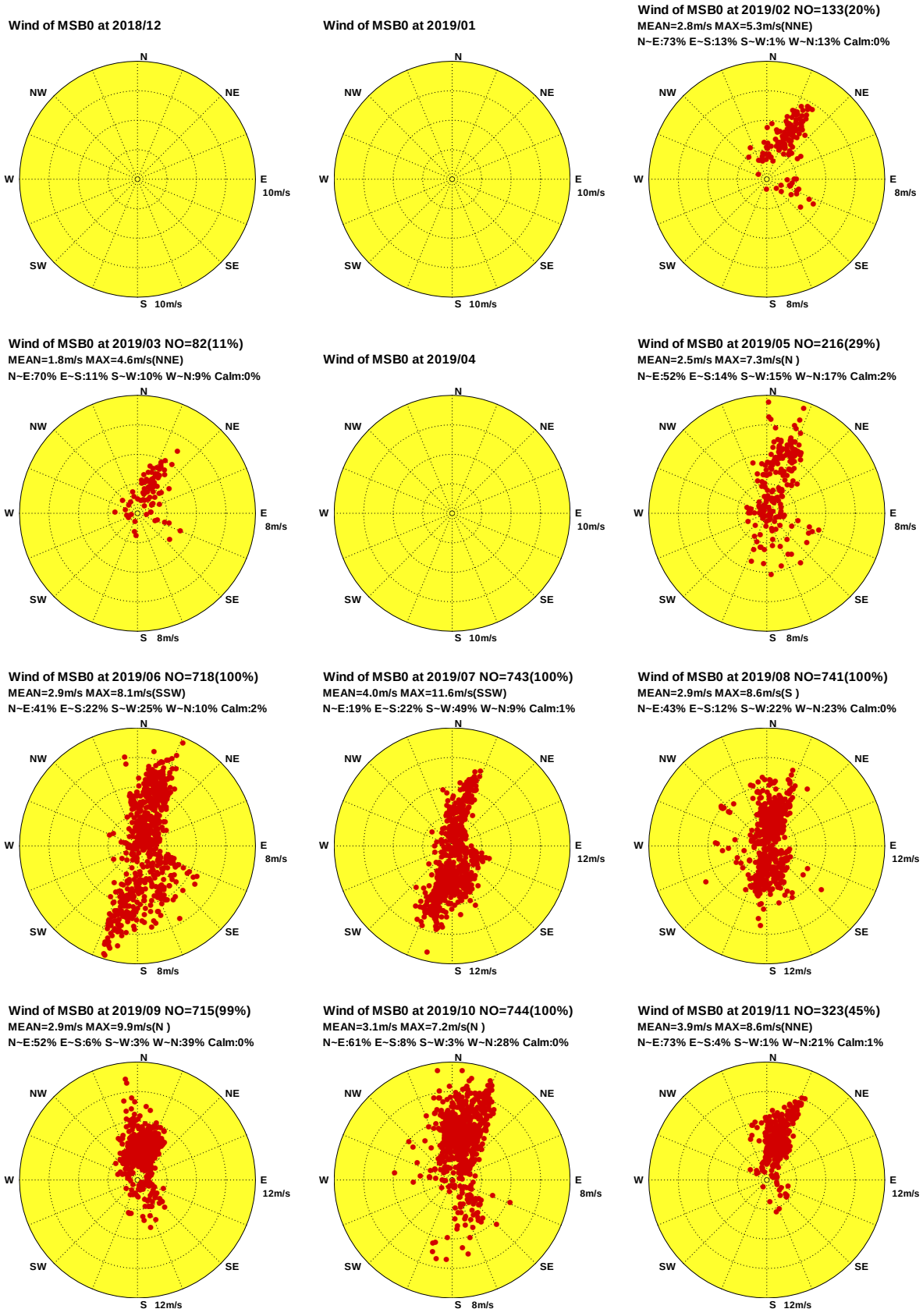


圖1.5.4 2019年馬祖海域每月 B 站修補前觀測風力向量分佈圖

Distribution of Wind Vectores

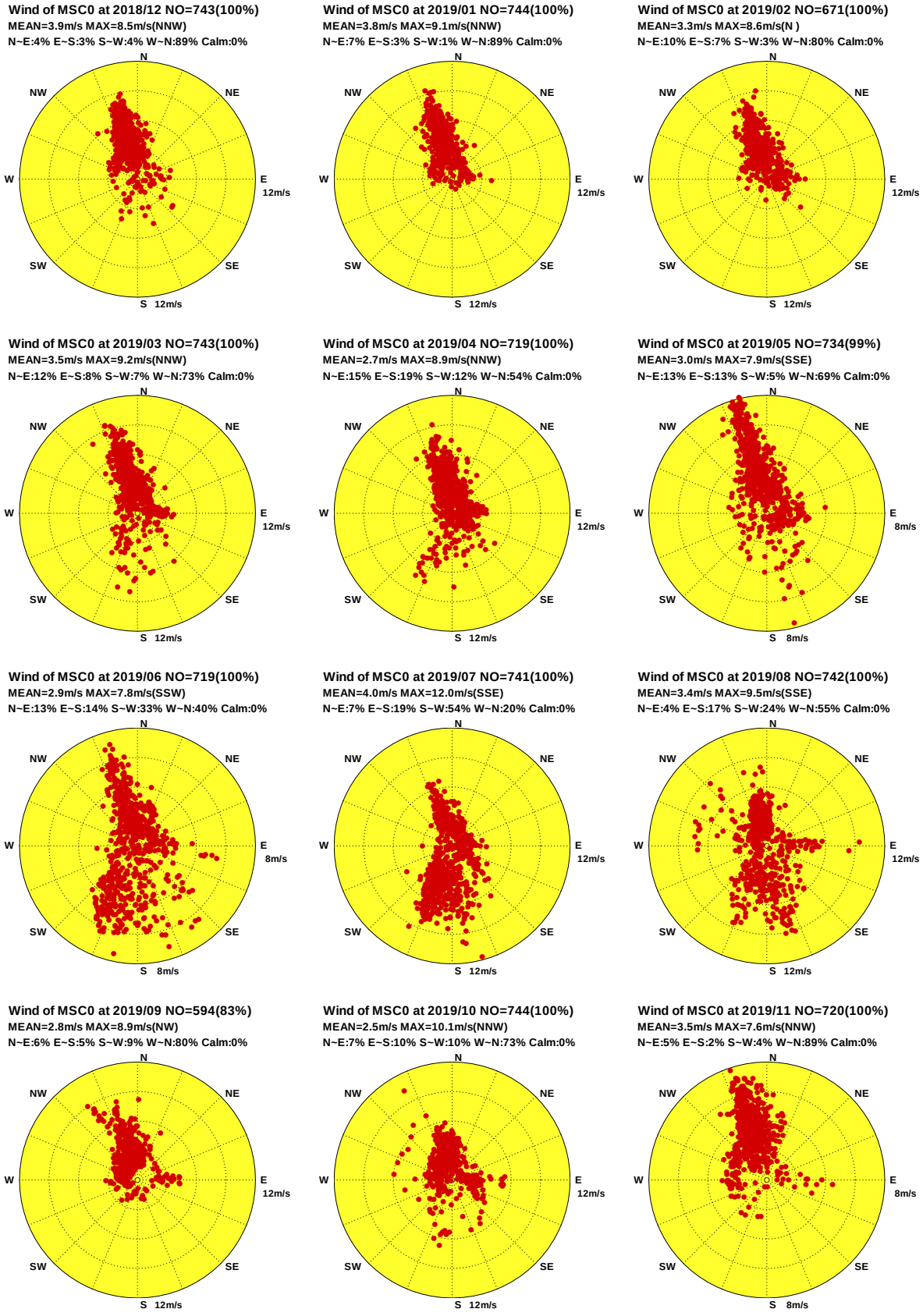


圖1.5.5 2019年馬祖海域每月 C 站修補前觀測風力向量分佈圖

Distribution of Wind Vectores

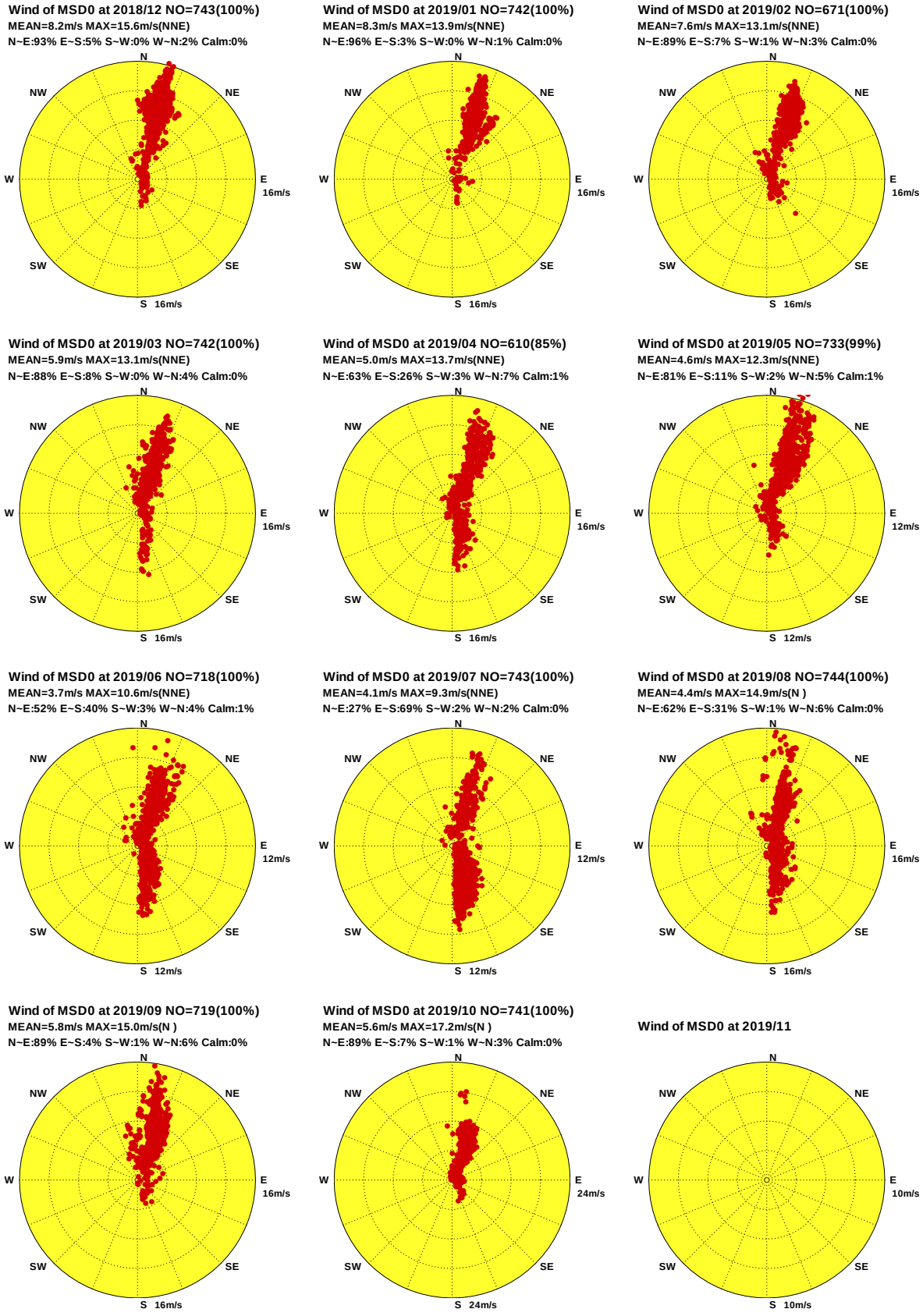


圖1.5.6 2019年馬祖海域每月 D 站修補前觀測風力向量分佈圖

Distribution of Wind Vectores

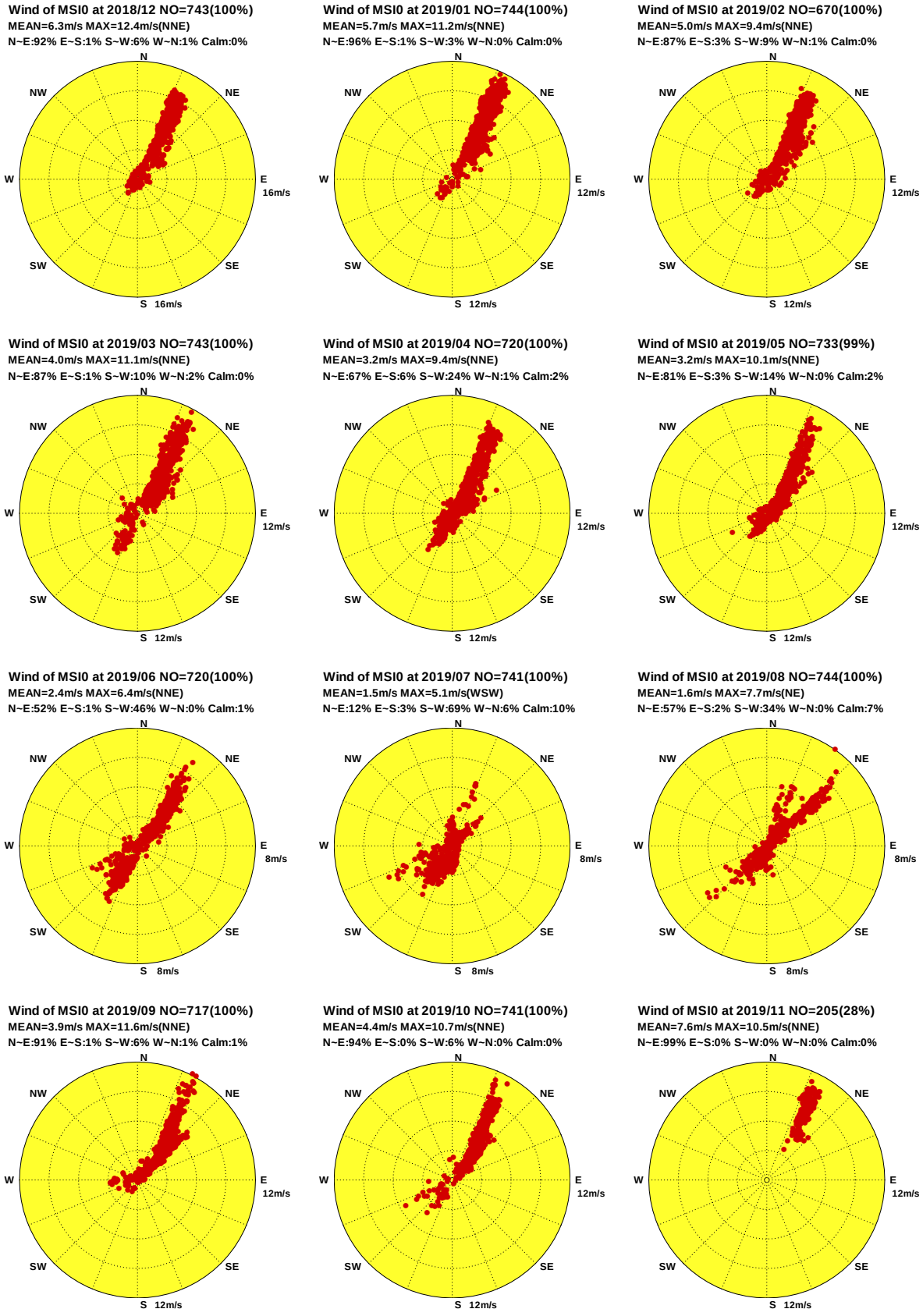


圖1.5.7 2019年馬祖海域每月Ｉ站修補前觀測風力向量分佈圖

1.6　2019 年馬祖海域風力各測站修補前

風力向量行進圖

Progressive Vector Diagram of Wind

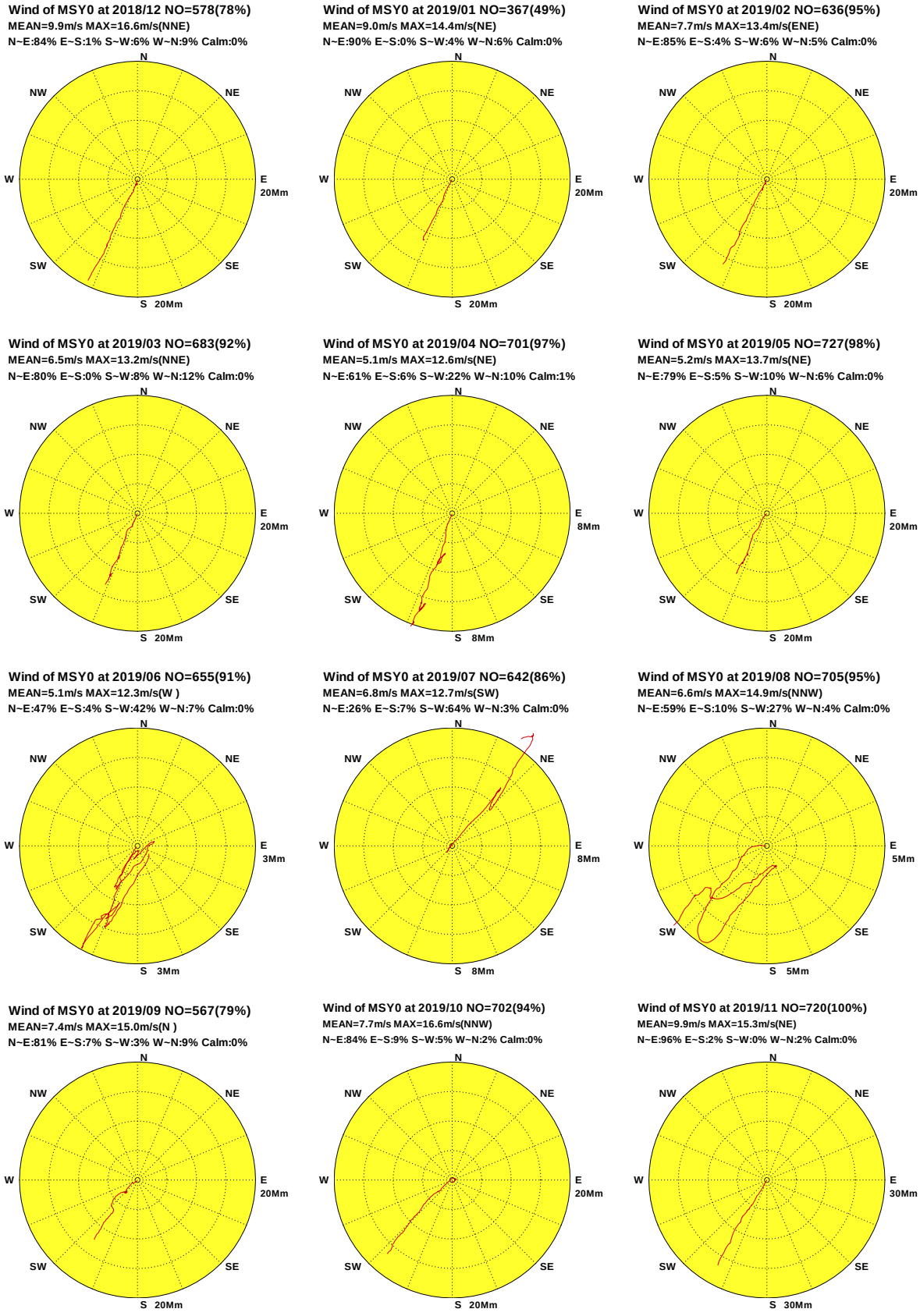


圖1.6.1 2019年馬祖海域每月 Y 站修補前觀測風力向量行進圖

Progressive Vector Diagram of Wind

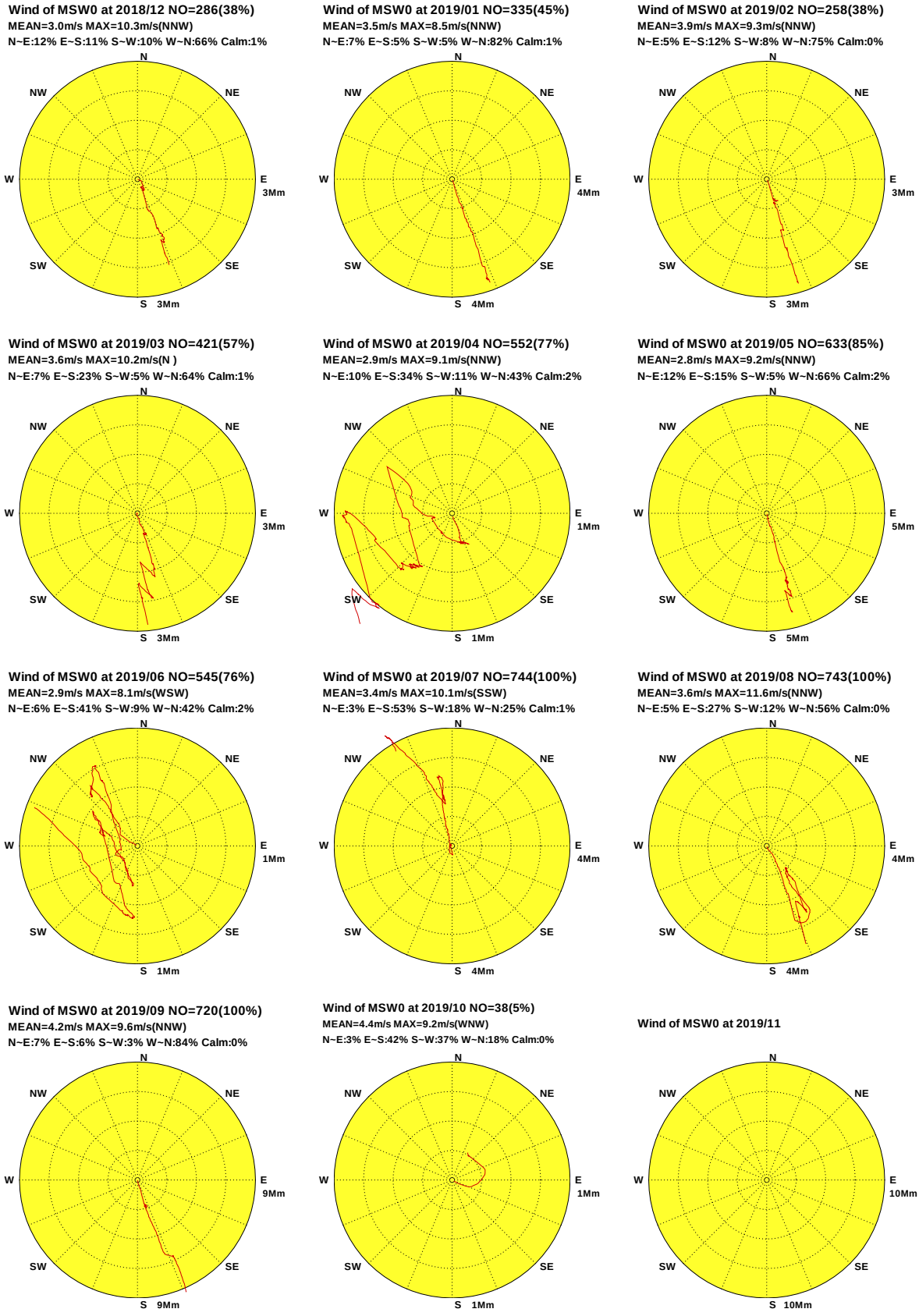


圖1.6.2 2019年馬祖海域每月 W 站修補前觀測風力向量行進圖

Progressive Vector Diagram of Wind

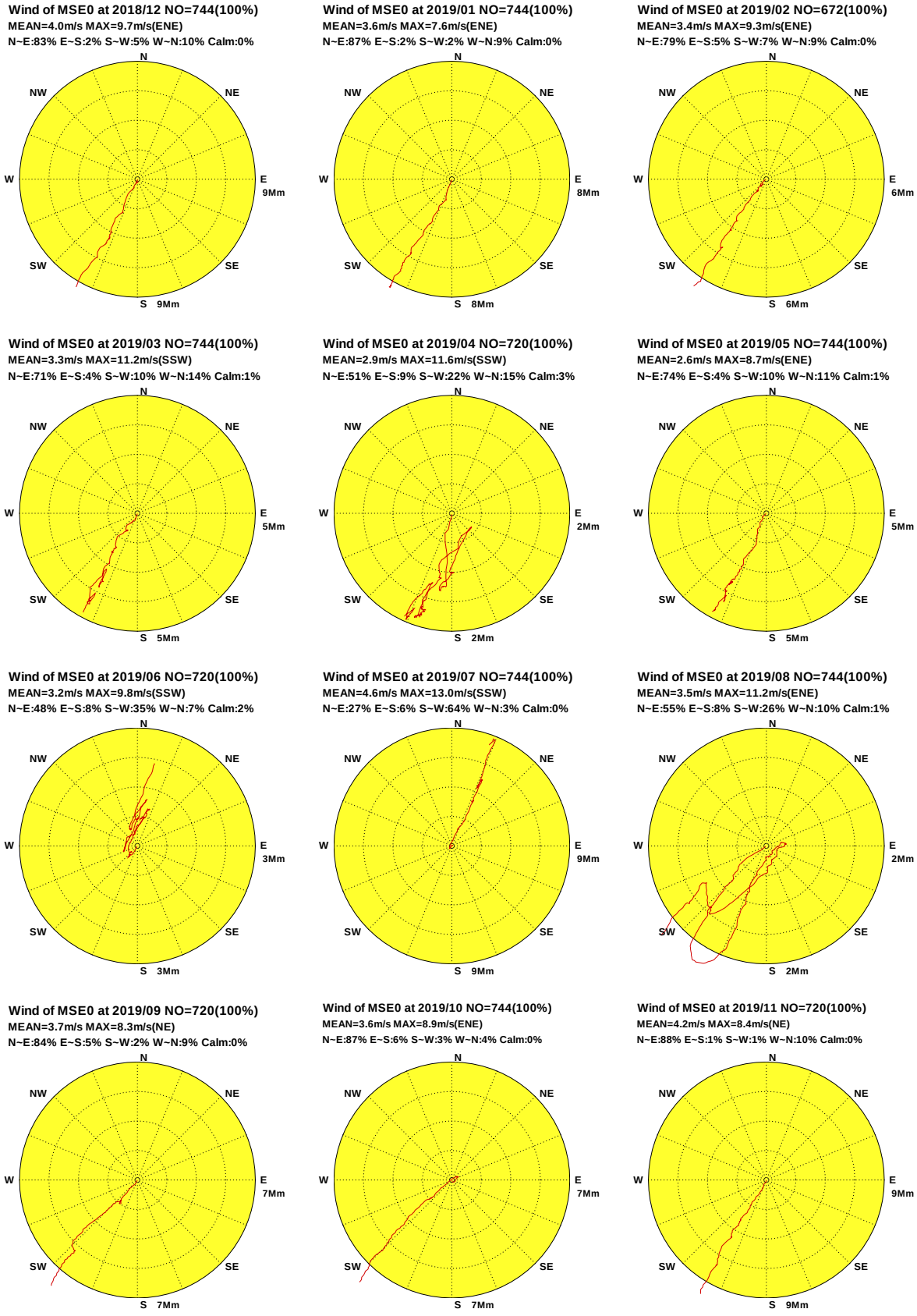


圖1.6.3 2019年馬祖海域每月 E 站修補前觀測風力向量行進圖

W18CMSE0.1H0 W191MSE0.1H0 W192MSE0.1H0 W193MSE0.1H0 W194MSE0.1H0 W195MSE0.1H0
W196MSE0.1H0 W197MSE0.1H0 W198MSE0.1H0 W199MSE0.1H0 W19AMSE0.1H0 W19BMSE0.1H0

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Progressive Vector Diagram of Wind

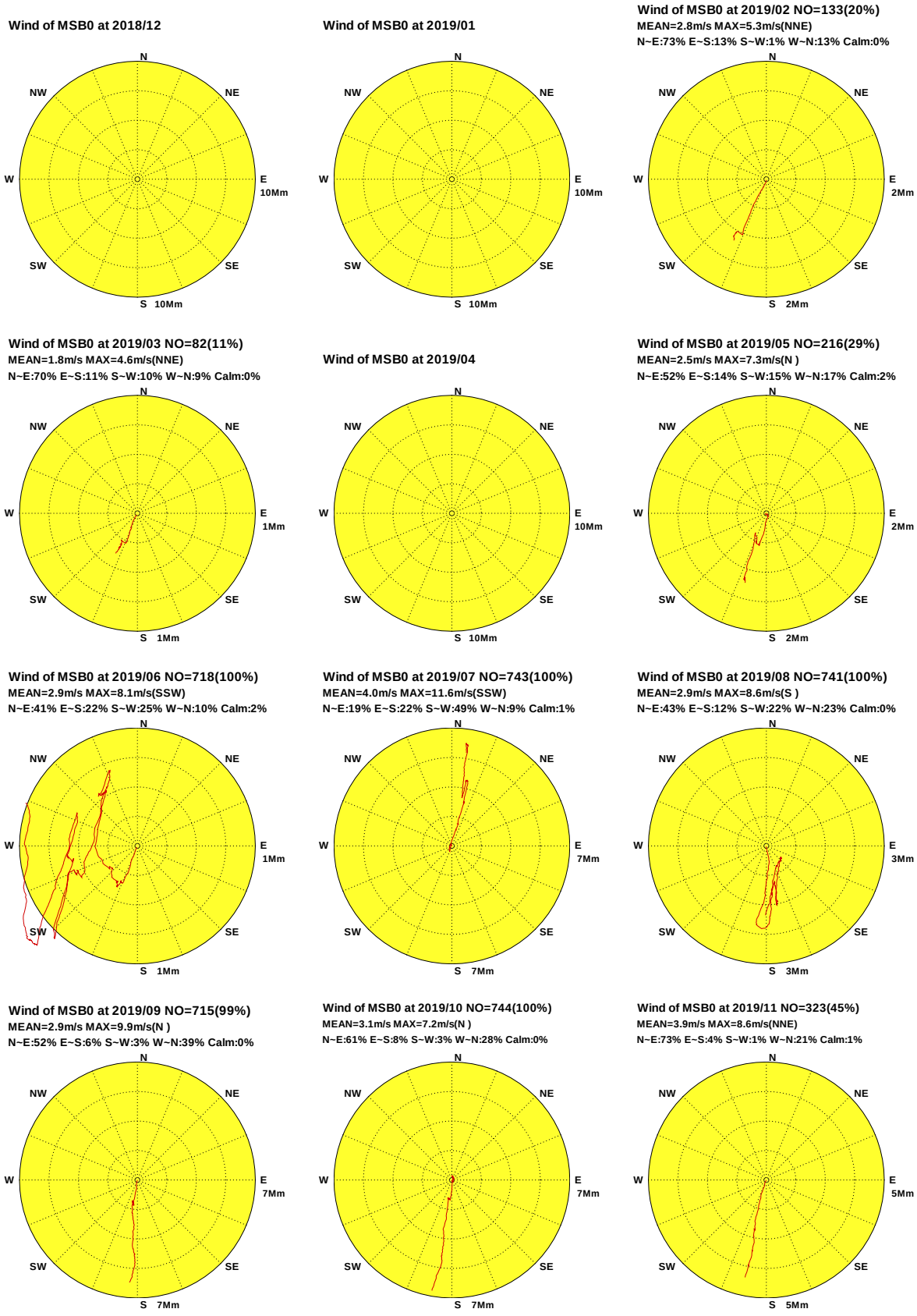


圖1.6.4 2019年馬祖海域每月 B 站修補前觀測風力向量行進圖

W18CMSB0.1H0 W191MSB0.1H0 W192MSB0.1H0 W193MSB0.1H0 W194MSB0.1H0 W195MSB0.1H0
W196MSB0.1H0 W197MSB0.1H0 W198MSB0.1H0 W199MSB0.1H0 W19AMSB0.1H0 W19BMSB0.1H0

Institute of Harbor & Marine Technology

Progressive Vector Diagram of Wind

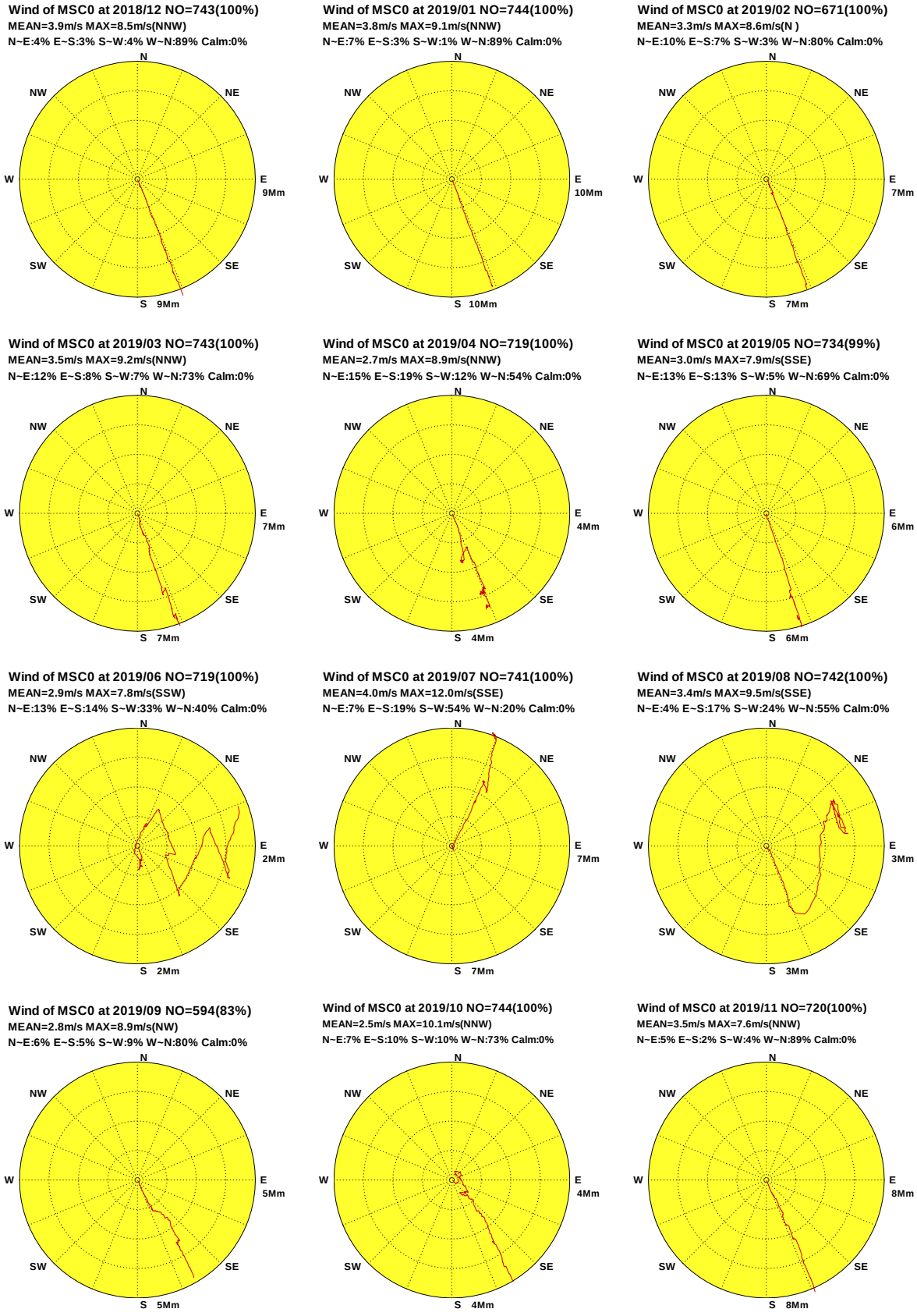


圖1.6.5 2019年馬祖海域每月 C 站修補前觀測風力向量行進圖

Progressive Vector Diagram of Wind

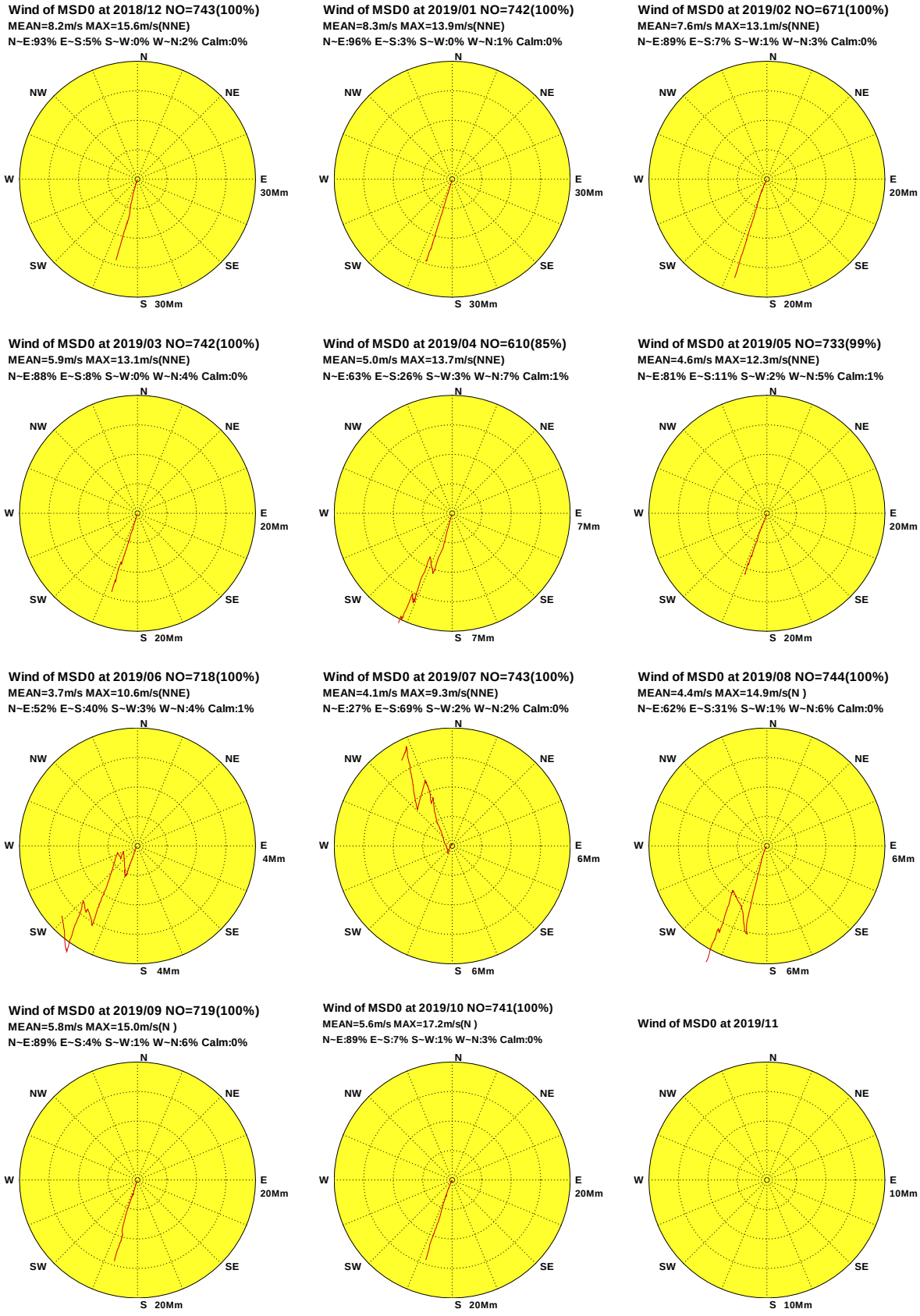


圖1.6.6 2019年馬祖海域每月 D 站修補前觀測風力向量行進圖

Progressive Vector Diagram of Wind

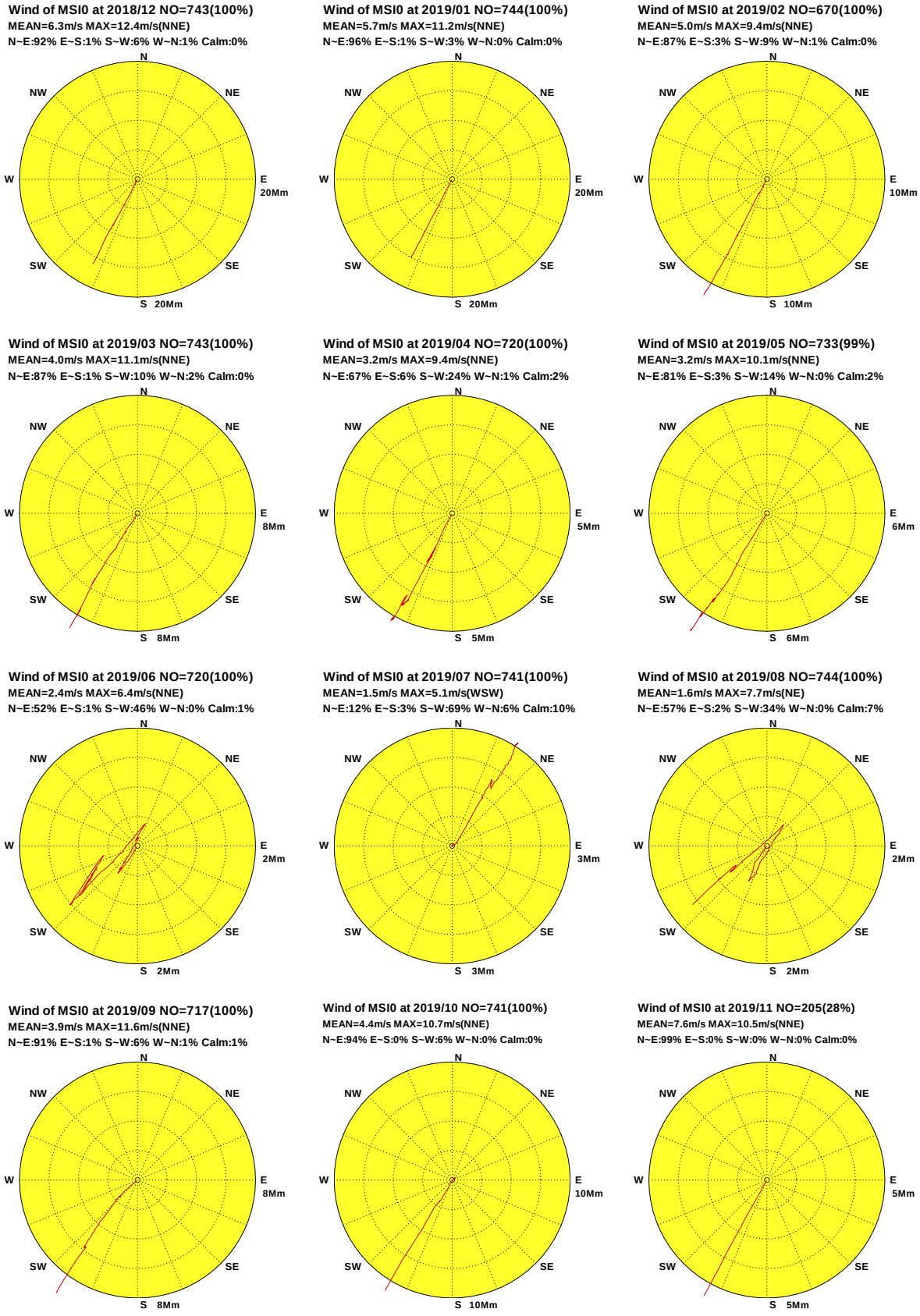


圖1.6.7 2019年馬祖海域每月Ｉ站修補前觀測風力向量行進圖

第二章　2019 年馬祖海域觀測波浪資料年報

2019 年馬祖海域波浪觀測包括**測站 X、測站 Y、測站 A、測站 2、測站 3 及測站 4 等 6** 個測站(測站位置如第 O 章圖 VU1，各測站歷年觀測波浪資料蒐集概況如表 VU1)。本年報取經檢核及補遺之 **Y 站**資料作為主要測站 1，**X 站**資料作為主要測站 2。

2.1　2019 年馬祖海域觀測波浪資料年報圖表

本章第 1 節**波浪**年報**資料處理之圖表包括:**

1. 表 2.1.1a　2019 年**各觀測站**每月**觀測波浪**資料**修補前**記錄表。
2. 表 2.1.1b 2019 年**主要測站**每月**觀測波浪**資料**修補後**記錄表。
3. 表 2.1.2　2019 年**主要測站 1 修補後**每月(季)及整年示性波高、示性週期及波向重要統計量統計表。
4. 表 2.1.3　2019 年**主要測站 2 修補後**每月(季)及整年示性波高、示性週期及波向重要統計量統計表。
5. 圖 2.1.1a　2019 年**主要測站 1 修補前後**每月示性波高歷線比較圖。
6. 圖 2.1.1b　2019 年**主要測站 1 修補前後**每月示性週期歷線比較圖。
7. 圖 2.1.1c　2019 年**主要測站 1 修補前後**每月波向歷線比較圖。
8. 圖 2.1.2a　2019 年**主要測站 2 修補前後**每月示性波高歷線比較圖。
9. 圖 2.1.2b　2019 年**主要測站 2 修補前後**每月示性週期歷線比較圖。
10. 圖 2.1.2c　2019 年**主要測站 2 修補前後**每月波向歷線比較圖。

11. 圖 2.1.3　2019 年**主要測站 1 修補後**每月波高向量分佈圖。

12. 圖 2.1.4　2019 年**主要測站 2 修補後**每月波高向量分佈圖。

第 2 節波浪年報資料處理之統計表包括: 2019 年馬祖海域**各測站修補前**每月(季)及整年示性波高、示性週期及波向重要統計量統計表。

第 3 節波浪年報資料處理之統計圖包括: 2019 年馬祖海域**主要測站 1 修補後**與**其他測站(修補前)**每月示性波高、示性週期及波向歷線比較圖。

第 4 節波浪年報資料處理之統計圖包括: 2019 年馬祖海域**主要測站 2 修補後**與**其他測站(修補前)**每月示性波高、示性週期及波向歷線比較圖。

第 5 節波浪年報資料處理之統計圖包括: 2019 年馬祖海域**各測站修補前**每月波高向量分佈圖。

表2.1.1a 2019年每月馬祖海域修補前各測站觀測波浪資料紀錄表

海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域
年月/測站	Y	X	A	2	3	4	1					
2018/12 月	573(77.0%)	733(98.5%)	742(99.7%)	738(99.2%)	*	*	*	*	*	*	*	*
2019/ 1 月	366(49.2%)	736(98.9%)	731(98.3%)	10(1.3%)	*	*	*	*	*	*	*	*
2019/ 2 月	635(94.5%)	407(60.6%)	639(95.1%)	182(27.1%)	*	*	*	*	*	*	*	*
2019/ 3 月	681(91.5%)	727(97.7%)	743(99.9%)	739(99.3%)	*	*	*	*	*	*	*	*
2019/ 4 月	698(96.9%)	639(88.8%)	372(51.7%)	711(98.8%)	*	*	*	*	*	*	*	*
2019/ 5 月	723(97.2%)	740(99.5%)	*	741(99.6%)	*	*	*	*	*	*	*	*
2019/ 6 月	647(89.9%)	707(98.2%)	*	718(99.7%)	*	*	*	*	*	*	*	*
2019/ 7 月	626(84.1%)	738(99.2%)	*	744(100%)	*	*	*	*	*	*	*	*
2019/ 8 月	693(93.1%)	617(82.9%)	53(7.1%)	694(93.3%)	218(29.3%)	102(13.7%)	*	*	*	*	*	*
2019/ 9 月	561(77.9%)	704(97.8%)	683(94.9%)	717(99.6%)	718(99.7%)	718(99.7%)	*	*	*	*	*	*
2019/10 月	690(92.7%)	736(98.9%)	735(98.8%)	678(91.1%)	738(99.2%)	739(99.3%)	*	*	*	*	*	*
2019/11 月	719(99.9%)	714(99.2%)	716(99.4%)	695(96.5%)	717(99.6%)	719(99.9%)	*	*	*	*	*	*
2019/冬季	1574(72.9%)	1876(86.9%)	2112(97.8%)	930(43.1%)	*	*	*	*	*	*	*	*
2019/春季	2102(95.2%)	2106(95.4%)	1115(50.5%)	2191(99.2%)	*	*	*	*	*	*	*	*
2019/夏季	1966(89.0%)	2062(93.4%)	53(2.4%)	2156(97.6%)	218(9.9%)	102(4.6%)	*	*	*	*	*	*
2019/秋季	1970(90.2%)	2154(98.6%)	2134(97.7%)	2090(95.7%)	2173(99.5%)	2176(99.6%)	*	*	*	*	*	*
2019/整年	7612(86.9%)	8198(93.6%)	5414(61.8%)	7367(84.1%)	2391(27.3%)	2278(26.0%)	*	*	*	*	*	*
起始年月	2018/12	2018/12	2018/12	2018/12	2019/08	2019/08	*	*	*	*	*	*
結束年月	2019/11	2019/11	2019/11	2019/11	2019/11	2019/11	*	*	*	*	*	*

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表2.1.1b 2019年每月馬祖海域修補後各測站波浪資料紀錄表

海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域
年月/測站	Y	X										
2018/12 月	744(100%)	744(100%)	*	*	*	*	*	*	*	*	*	*
2019/ 1 月	744(100%)	744(100%)	*	*	*	*	*	*	*	*	*	*
2019/ 2 月	672(100%)	672(100%)	*	*	*	*	*	*	*	*	*	*
2019/ 3 月	744(100%)	744(100%)	*	*	*	*	*	*	*	*	*	*
2019/ 4 月	720(100%)	720(100%)	*	*	*	*	*	*	*	*	*	*
2019/ 5 月	744(100%)	744(100%)	*	*	*	*	*	*	*	*	*	*
2019/ 6 月	720(100%)	720(100%)	*	*	*	*	*	*	*	*	*	*
2019/ 7 月	744(100%)	744(100%)	*	*	*	*	*	*	*	*	*	*
2019/ 8 月	744(100%)	744(100%)	*	*	*	*	*	*	*	*	*	*
2019/ 9 月	720(100%)	720(100%)	*	*	*	*	*	*	*	*	*	*
2019/10 月	744(100%)	744(100%)	*	*	*	*	*	*	*	*	*	*
2019/11 月	720(100%)	720(100%)	*	*	*	*	*	*	*	*	*	*
2019/冬季	2160(100%)	2160(100%)	*	*	*	*	*	*	*	*	*	*
2019/春季	2208(100%)	2208(100%)	*	*	*	*	*	*	*	*	*	*
2019/夏季	2208(100%)	2208(100%)	*	*	*	*	*	*	*	*	*	*
2019/秋季	2184(100%)	2184(100%)	*	*	*	*	*	*	*	*	*	*
2019/整年	8760(100%)	8760(100%)	*	*	*	*	*	*	*	*	*	*
起始年月	2018/12	2018/12	*	*	*	*	*	*	*	*	*	*
結束年月	2019/11	2019/11	*	*	*	*	*	*	*	*	*	*

表2.1.2　2019年馬祖海域主要測站1修補後示性波高週期及波向重要統計量統計表

觀測	波高	H_s	H_s最大	T_p	T_p	小波	小浪	中浪	大浪	T_p	T_p	T_p	T_p	波向	波向	波向	波向	波向	主波向
日期	蒐集	平均	(波高/週期/波向)	平均	最大	<0.5m	~1.5m	~3m	>3m	<6s	6~8s	8~10s	>10s	蒐集	N~E	E~S	S~W	W~N	(百分比)
年、月	率	(m)	(m/s/來向)	(s)	(s)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	率	(%)	(%)	(%)	(%)	來向/%
2018/12	100%	2.25	5.6/ 8.1/NE	5.7	8.1	.5	34.4	35.8	29.3	65.1	34.8	.1	.0	100%	75.0	24.8	.3	.0	ENE/32%
2019/01	100%	1.73	4.2/ 7.0/NE	5.3	7.1	3.0	41.0	49.5	6.6	91.5	8.5	.0	.0	100%	68.8	31.2	.0	.0	E /47%
2019/02	100%	1.87	4.2/ 7.2/NE	5.6	7.2	.0	31.1	63.5	5.4	79.9	20.1	.0	.0	100%	86.5	13.4	.1	.0	NE /44%
2019/03	100%	1.49	3.5/ 7.1/NE	5.3	7.3	.0	63.3	33.7	3.0	85.9	14.1	.0	.0	100%	71.6	23.3	5.0	.1	ENE/41%
2019/04	100%	1.28	3.9/ 7.3/ENE	5.2	7.6	6.1	61.0	30.3	2.6	87.5	12.5	.0	.0	100%	60.6	29.2	10.0	.3	ENE/37%
2019/05	100%	1.28	4.4/ 7.2/NE	5.3	7.5	.5	73.3	22.4	3.8	80.0	20.0	.0	.0	100%	61.0	37.4	1.2	.4	ENE/37%
2019/06	100%	1.03	2.8/ 5.3/ESE	4.7	6.9	4.4	82.6	12.9	.0	96.7	3.3	.0	.0	100%	35.8	22.2	41.7	.3	S /24%
2019/07	100%	1.20	2.8/ 5.6/S	4.7	7.4	4.2	63.8	32.0	.0	95.6	4.4	.0	.0	100%	11.7	38.4	49.9	.0	S /26%
2019/08	100%	1.51	6.9/ 9.6/ENE	5.3	9.6	.0	67.1	25.0	7.9	81.5	16.7	1.9	.0	100%	38.4	44.4	17.2	.0	ESE/19%
2019/09	100%	1.74	4.7/ 7.1/NE	5.4	9.2	.0	49.9	40.0	10.1	78.5	19.4	2.1	.0	100%	63.2	36.1	.3	.4	E /39%
2019/10	100%	1.73	5.5/ 8.1/NE	5.6	11.2	.7	42.9	49.7	6.7	74.7	20.3	4.6	.4	100%	78.4	19.8	1.3	.5	ENE/38%
2019/11	100%	2.19	5.0/ 7.1/ENE	5.7	7.5	.0	27.5	54.3	18.2	64.0	36.0	.0	.0	100%	76.8	23.2	.0	.0	ENE/38%
2019/冬	100%	1.96	5.6/ 8.1/NE	5.5	8.1	1.2	35.6	49.1	14.0	78.8	21.2	.0	.0	100%	76.4	23.4	.1	.0	ENE/31%
2019/春	100%	1.35	4.4/ 7.2/NE	5.3	7.6	2.2	65.9	28.8	3.1	84.4	15.6	.0	.0	100%	64.4	29.9	5.3	.3	ENE/38%
2019/夏	100%	1.25	6.9/ 9.6/ENE	4.9	9.6	2.9	71.1	23.4	2.7	91.2	8.2	.6	.0	100%	28.6	35.1	36.2	.1	S /20%
2019/秋	100%	1.88	5.5/ 8.1/NE	5.5	11.2	.2	40.1	48.0	11.6	72.4	25.2	2.2	.1	100%	72.8	26.3	.5	.3	ENE/35%
2019/年	100%	1.61	6.9/ 9.6/ENE	5.3	11.2	1.6	53.3	37.2	7.8	81.7	17.5	.7	.0	100%	60.5	28.7	10.6	.2	ENE/29%

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表2.1.3　2019年馬祖海域主要測站2修補後示性波高週期及波向重要統計量統計表

觀測	波高	H_s	H_s最大	T_p	T_p	小波	小浪	中浪	大浪	T_p	T_p	T_p	T_p	波向	波向	波向	波向	波向	主波向
日期	蒐集	平均	(波高/週期/波向)	平均	最大	<0.5m	~1.5m	~3m	>3m	<6s	6~8s	8~10s	>10s	蒐集	N~E	E~S	S~W	W~N	(百分比)
年、月	率	(m)	(m/s/來向)	(s)	(s)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	率	(%)	(%)	(%)	(%)	來向/%
2018/12	100%	.79	1.9/ 8.0/NE	7.5	12.7	32.3	64.2	3.5	.0	18.8	41.0	33.5	6.7	100%	100.0	.0	.0	.0	NE /82%
2019/01	100%	.65	1.4/ 7.2/NE	7.0	14.9	37.2	62.8	.0	.0	26.7	51.3	16.7	5.2	100%	100.0	.0	.0	.0	NE /80%
2019/02	100%	.66	1.8/ 8.4/NE	7.7	13.2	20.4	79.3	.3	.0	9.5	40.0	47.6	2.8	100%	99.9	.1	.0	.0	NE /71%
2019/03	100%	.52	1.5/ 7.8/NE	6.8	11.5	60.3	39.5	.1	.0	22.3	57.8	19.0	.9	100%	100.0	.0	.0	.0	NE /74%
2019/04	100%	.43	1.4/ 5.5/NE	6.9	11.0	65.8	34.2	.0	.0	17.8	58.6	22.9	.7	100%	99.3	.3	.0	.4	NE /67%
2019/05	100%	.46	1.5/ 8.4/NE	7.3	12.5	67.9	32.1	.0	.0	25.1	40.3	22.7	11.8	100%	100.0	.0	.0	.0	NE /74%
2019/06	100%	.29	.9/ 6.3/NE	5.8	10.5	87.4	12.6	.0	.0	48.3	39.2	12.1	.4	100%	98.2	1.0	.6	.3	NE /61%
2019/07	100%	.26	.9/ 6.8/NE	6.8	14.2	89.4	10.6	.0	.0	43.3	27.4	17.6	11.7	100%	98.1	.9	.0	.9	NE /45%
2019/08	100%	.48	2.3/13.3/NE	8.1	14.6	64.5	33.6	1.9	.0	24.5	24.6	26.1	24.9	100%	99.7	.1	.0	.1	NE /63%
2019/09	100%	.65	1.5/ 9.7/NE	7.3	15.1	30.8	68.9	.3	.0	38.9	17.4	20.7	23.1	100%	99.7	.3	.0	.0	NE /64%
2019/10	100%	.65	1.7/10.8/NE	8.1	16.3	28.8	71.0	.3	.0	21.2	32.1	24.9	21.8	100%	100.0	.0	.0	.0	NE /67%
2019/11	100%	.82	1.7/ 9.2/NE	7.3	15.1	21.7	76.9	1.4	.0	22.8	35.7	35.1	6.4	100%	100.0	.0	.0	.0	NE /55%
2019/冬	100%	.70	1.9/ 8.0/NE	7.4	14.9	30.3	68.4	1.3	.0	18.7	44.3	32.1	5.0	100%	100.0	.0	.0	.0	NE /78%
2019/春	100%	.47	1.5/ 7.8/NE	7.0	12.5	64.7	35.3	.0	.0	21.8	52.2	21.5	4.5	100%	99.8	.1	.0	.1	NE /71%
2019/夏	100%	.34	2.3/13.3/NE	6.9	14.6	80.3	19.0	.6	.0	38.6	30.3	18.7	12.5	100%	98.7	.7	.2	.5	NE /56%
2019/秋	100%	.71	1.7/ 9.2/NE	7.6	16.3	27.1	72.3	.6	.0	27.6	28.4	26.9	17.1	100%	99.9	.1	.0	.0	NE /62%
2019/年	100%	.55	2.3/13.3/NE	7.2	16.3	50.8	48.6	.7	.0	26.7	38.8	24.7	9.8	100%	99.6	.2	.0	.1	NE /67%

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Wave H_s in Ma-Tsu Seas of MSY0 at 2019

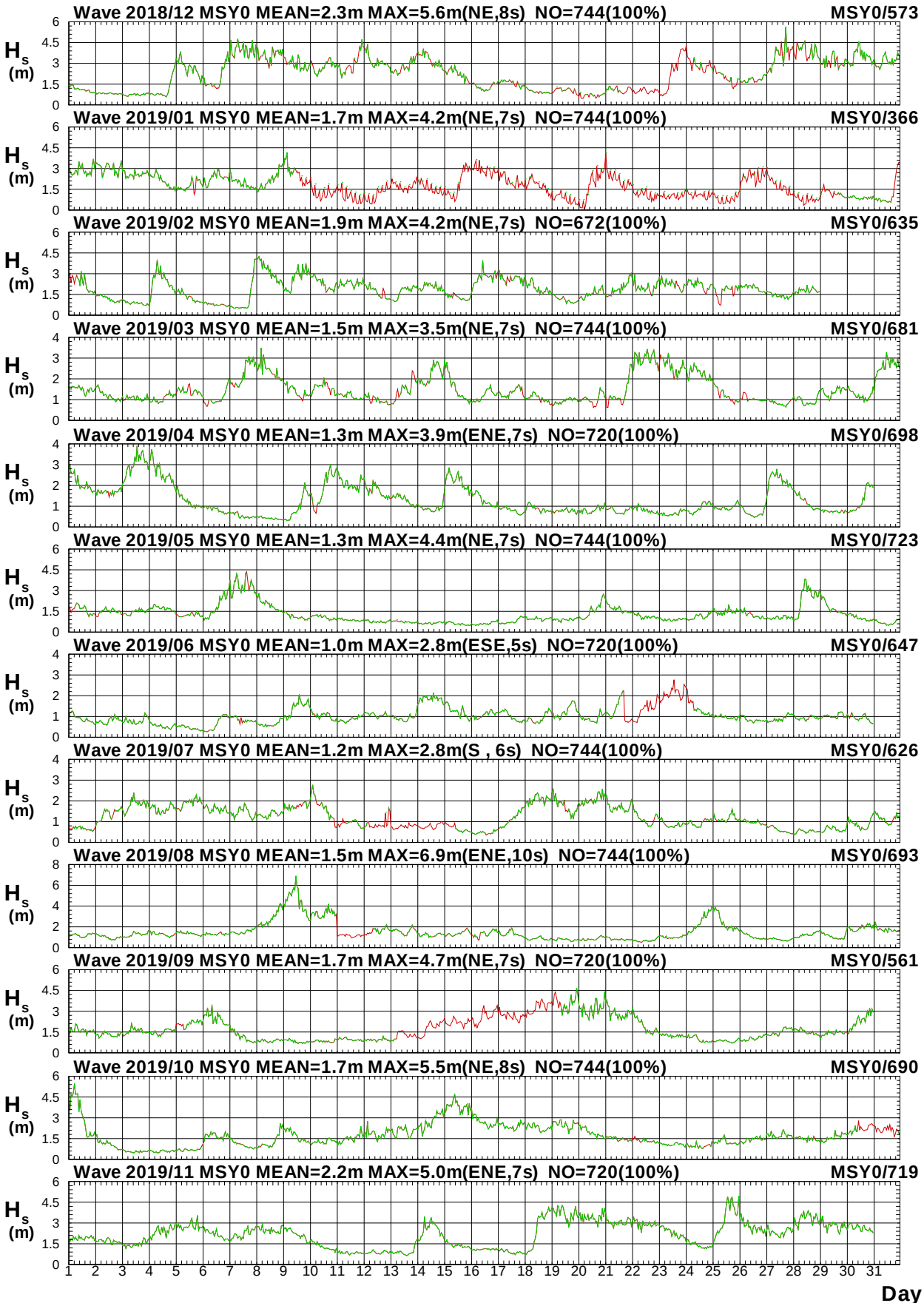


圖2.1.1a　2019年每月馬祖海域 Y 站修補前後之波高比較圖

V18CMSY0.1HA V18CMSY0.1H0 V191MSY0.1HA V191MSY0.1H0 V192MSY0.1HA V192MSY0.1H0
V193MSY0.1HA V193MSY0.1H0 V194MSY0.1HA V194MSY0.1H0 V195MSY0.1HA V195MSY0.1H0

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Wave T_p in Ma-Tsu Seas of MSY0 at 2019

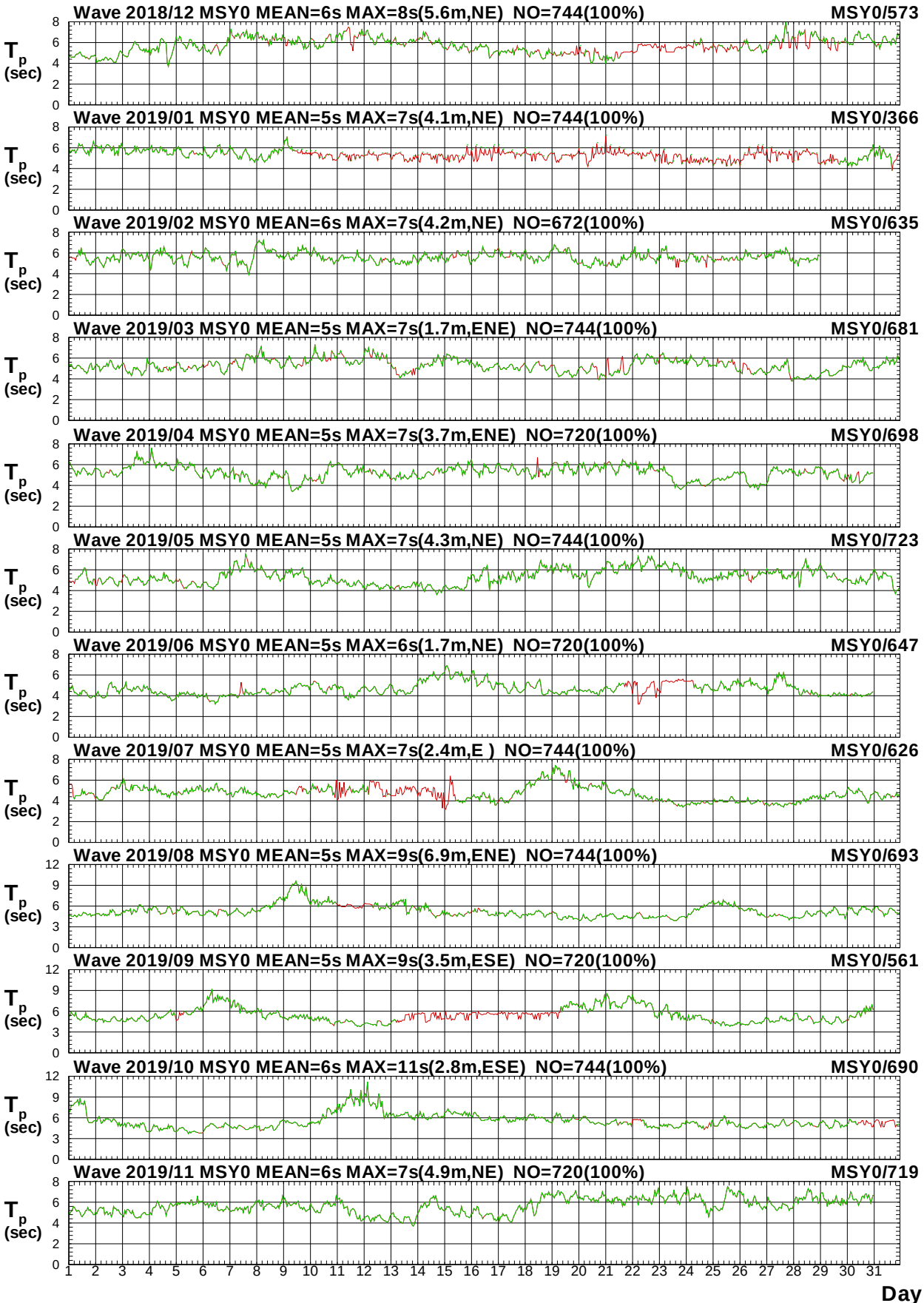


圖2.1.1b　2019年每月馬祖海域 Y 站修補前後之週期比較圖

V18CMSY0.1HA V18CMSY0.1H0 V191MSY0.1HA V191MSY0.1H0 V192MSY0.1HA V192MSY0.1H0
V193MSY0.1HA V193MSY0.1H0 V194MSY0.1HA V194MSY0.1H0 V195MSY0.1HA V195MSY0.1H0

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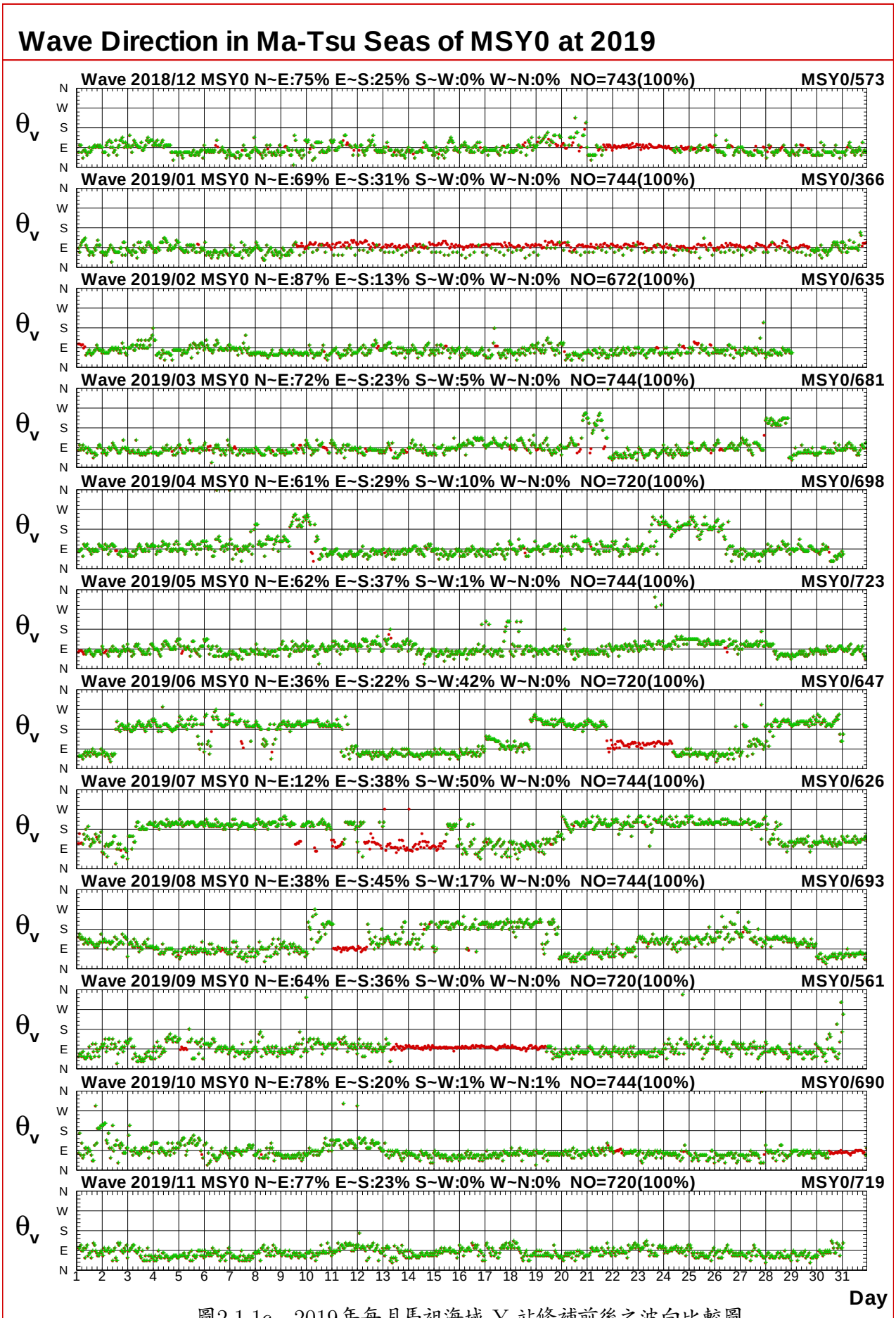


圖2.1.1c　2019年每月馬祖海域 Y 站修補前後之波向比較圖

V18CMSY0.1HA V18CMSY0.1H0 V191MSY0.1HA V191MSY0.1H0 V192MSY0.1HA V192MSY0.1H0
V193MSY0.1HA V193MSY0.1H0 V194MSY0.1HA V194MSY0.1H0 V195MSY0.1HA V195MSY0.1H0

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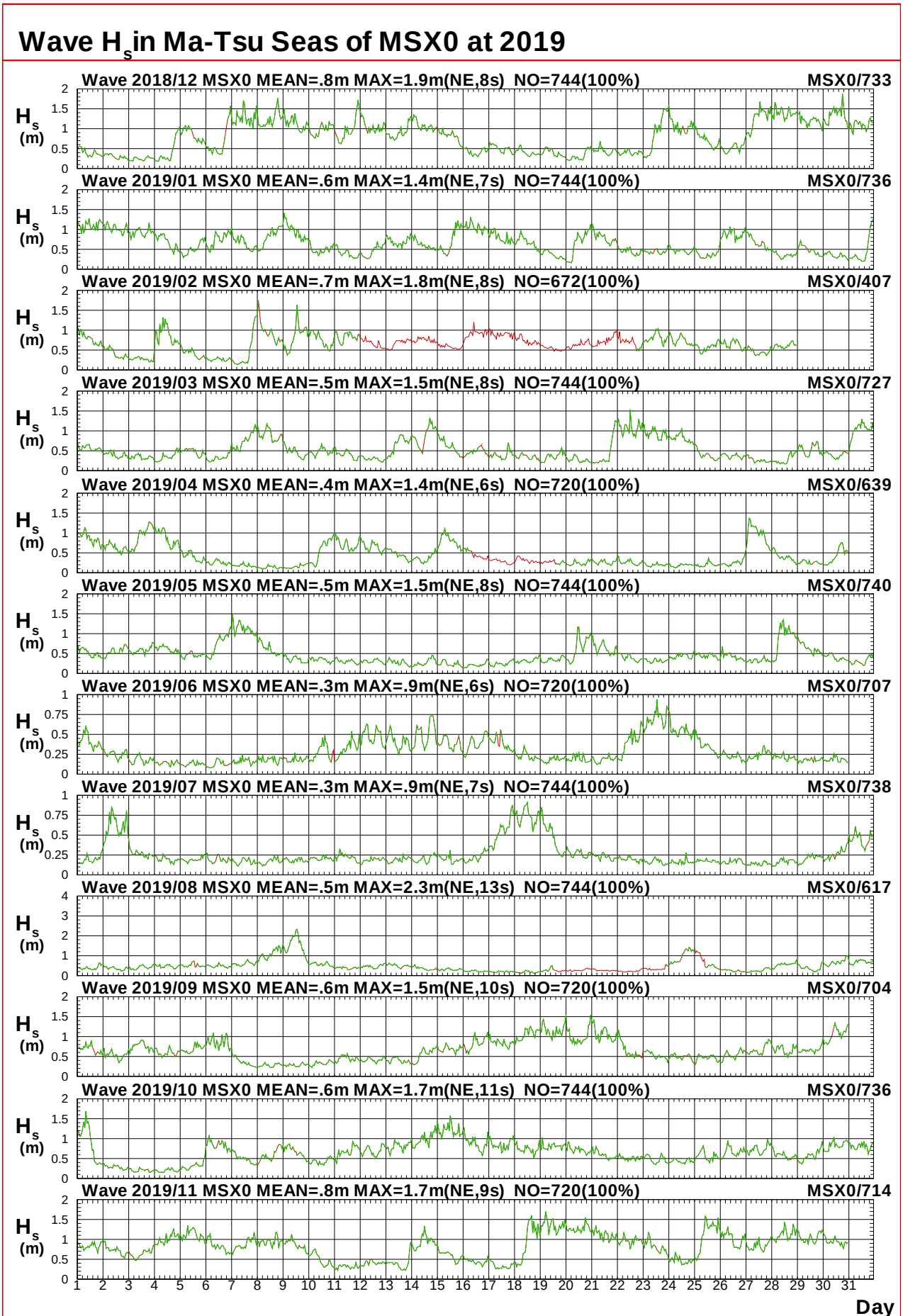


圖2.1.2a　2019年每月馬祖海域 X 站修補前後之波高比較圖

V18CMSX0.1HA V18CMSX0.1H0 V191MSX0.1HA V191MSX0.1H0 V192MSX0.1HA V192MSX0.1H0
V193MSX0.1HA V193MSX0.1H0 V194MSX0.1HA V194MSX0.1H0 V195MSX0.1HA V195MSX0.1H0

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Wave T_p in Ma-Tsu Seas of MSX0 at 2019

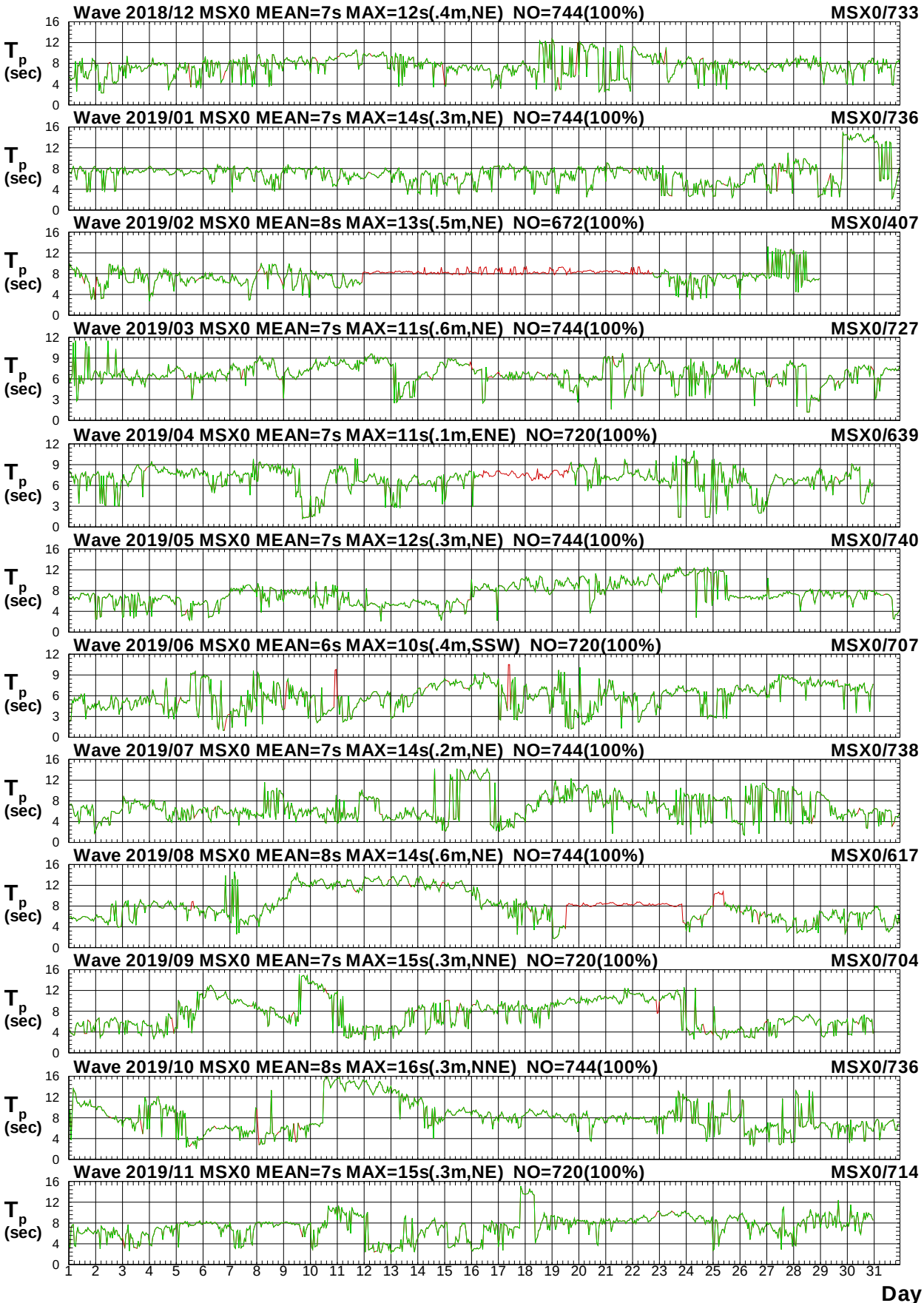


圖2.1.2b　2019年每月馬祖海域 X 站修補前後之週期比較圖

V18CMSX0.1HA V18CMSX0.1H0 V191MSX0.1HA V191MSX0.1H0 V192MSX0.1HA V192MSX0.1H0
V193MSX0.1HA V193MSX0.1H0 V194MSX0.1HA V194MSX0.1H0 V195MSX0.1HA V195MSX0.1H0

Institute of Harbor & Marine Technology

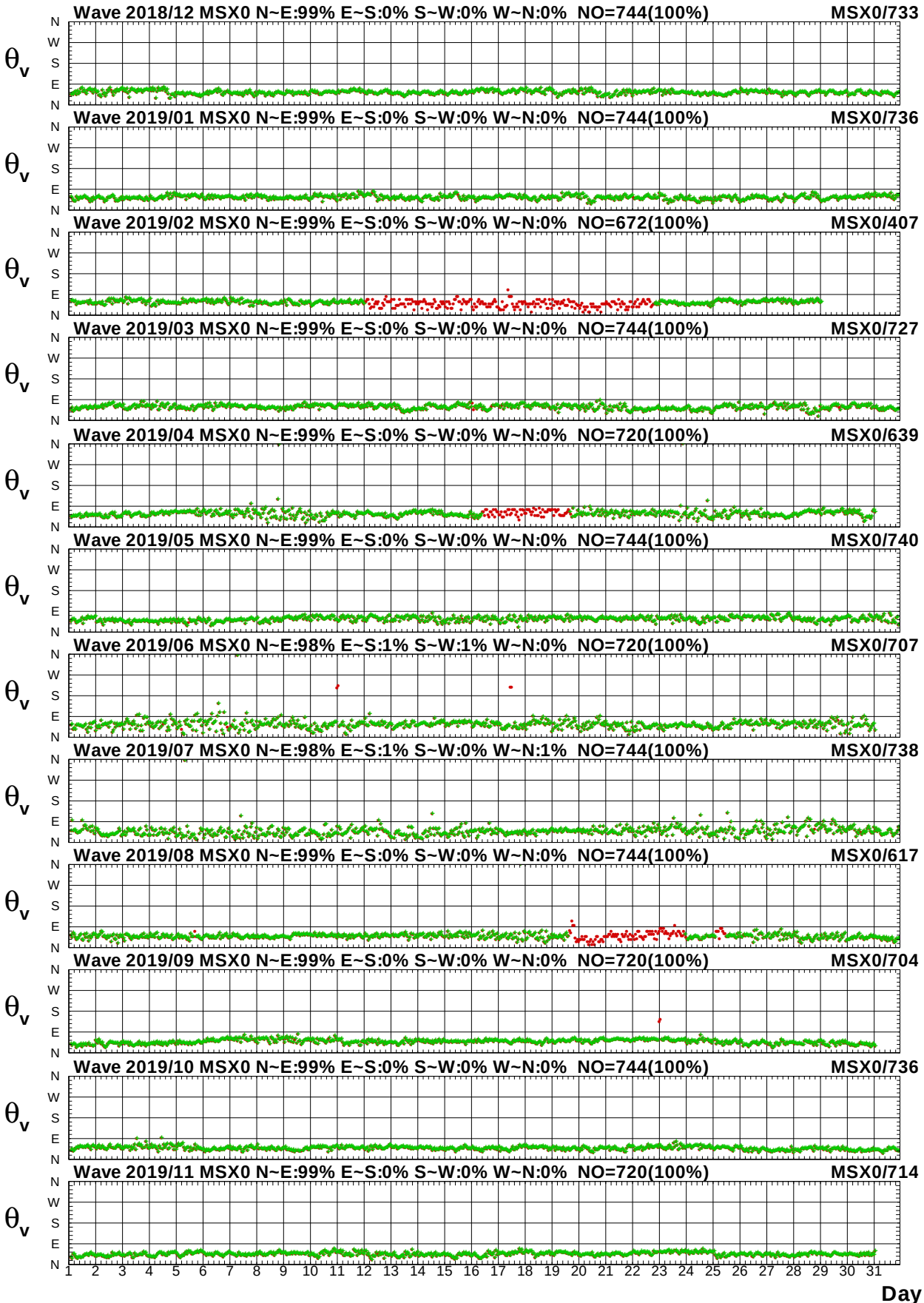


圖2.1.2c　2019年每月馬祖海域 X 站修補前後之波向比較圖

V18CMSX0.1HA V18CMSX0.1H0 V191MSX0.1HA V191MSX0.1H0 V192MSX0.1HA V192MSX0.1H0 V193MSX0.1HA V193MSX0.1H0 V194MSX0.1HA V194MSX0.1H0 V195MSX0.1HA V195MSX0.1H0	Institute of Harbor & Marine Technology

Distribution of H_s Vectores

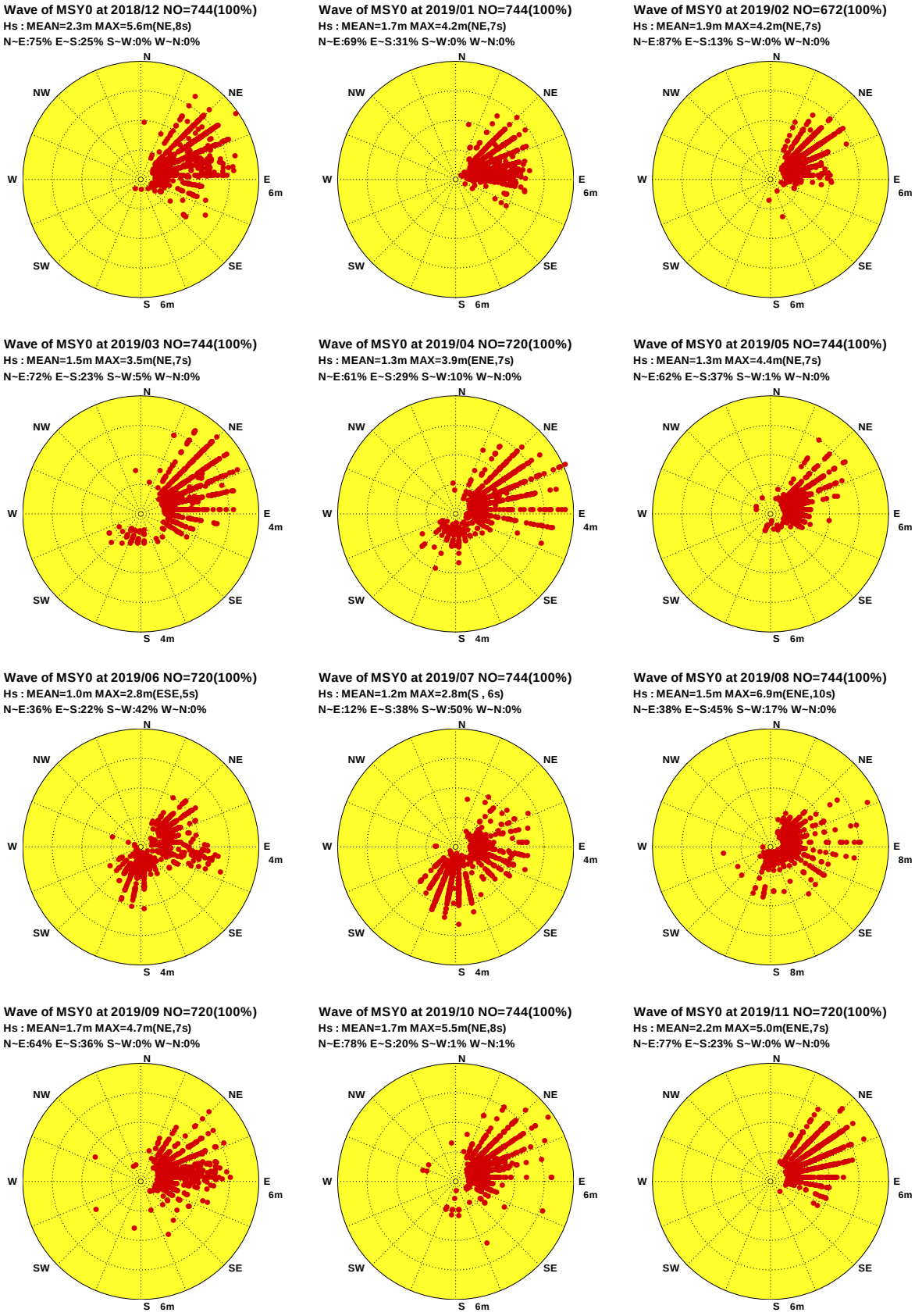


圖2.1.3 2019年馬祖海域每月 Y 站修補後觀測波高向量分佈圖

Distribution of H_s Vectores

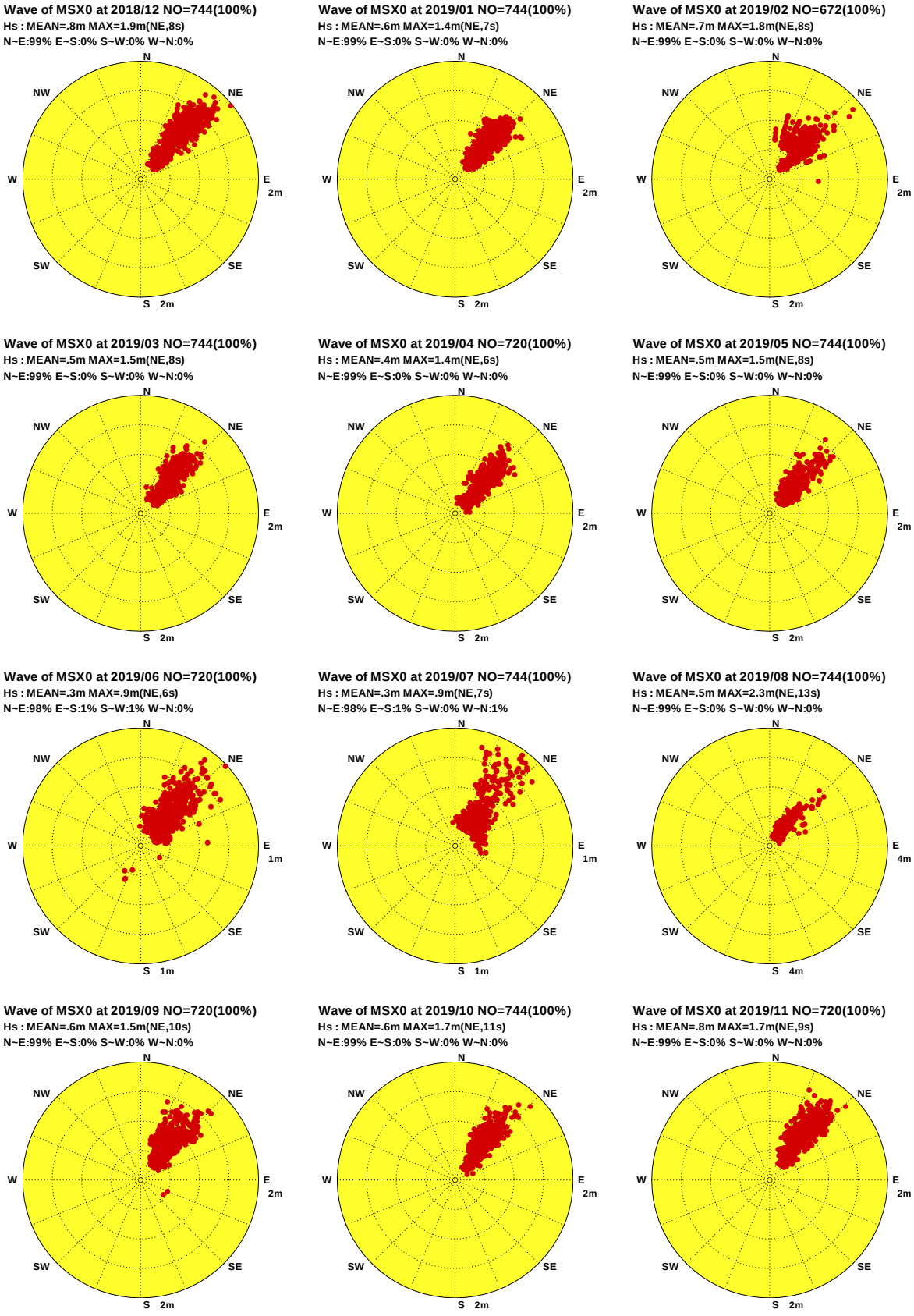


圖2.1.4 2019年馬祖海域每月 X 站修補後觀測波高向量分佈圖

2.2　2019 年馬祖海域各測站修補前

波浪統計量統計表

表2.2.1　2019年馬祖海域 Y 站修補前示性波高週期及波向重要統計量統計表

觀測	波高	H_s	H_s最大	T_p	T_p	小波	小浪	中浪	大浪	T_p	T_p	T_p	T_p	波向	波向	波向	波向	波向	主波向
日期	蒐集	平均	(波高/週期/波向)	平均	最大	<0.5m	~1.5m	~3m	>3m	<6s	6~8s	8~10s	>10s	蒐集	N~E	E~S	S~W	W~N	(百分比)
年、月	率	(m)	(m/s/來向)	(s)	(s)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	率	(%)	(%)	(%)	(%)	來向/%
2018/12	77%	2.32	5.6/ 8.1/NE	5.7	8.1	.0	31.2	37.9	30.9	57.9	41.9	.2	.0	77%	73.6	26.0	.3	.0	NE /38%
2019/01	49%	2.00	4.2/ 7.0/NE	5.5	7.1	.0	29.8	60.4	9.8	82.8	17.2	.0	.0	49%	80.1	19.9	.0	.0	NE /41%
2019/02	95%	1.87	4.2/ 7.2/NE	5.6	7.2	.0	31.0	63.3	5.7	79.1	20.9	.0	.0	95%	87.7	12.1	.2	.0	NE /46%
2019/03	92%	1.51	3.5/ 7.1/NE	5.3	7.3	.0	62.7	34.1	3.2	85.6	14.4	.0	.0	92%	69.3	25.1	5.4	.1	ENE/37%
2019/04	97%	1.29	3.9/ 7.3/ENE	5.2	7.6	6.2	60.2	30.9	2.7	87.5	12.5	.0	.0	97%	59.6	29.9	10.2	.3	ENE/37%
2019/05	97%	1.28	4.4/ 7.2/NE	5.3	7.5	.6	73.4	22.3	3.7	79.5	20.5	.0	.0	97%	60.2	38.2	1.2	.4	ENE/36%
2019/06	90%	.98	2.2/ 5.2/S	4.6	6.9	4.8	86.7	8.5	.0	96.3	3.7	.0	.0	90%	37.6	16.4	45.7	.3	S /27%
2019/07	84%	1.25	2.8/ 5.6/S	4.7	7.4	4.6	59.4	35.9	.0	95.0	5.0	.0	.0	84%	7.7	35.1	57.2	.0	S /31%
2019/08	93%	1.53	6.9/ 9.6/ENE	5.3	9.6	.0	65.2	26.3	8.5	82.8	15.2	2.0	.0	93%	35.5	46.8	17.7	.0	ESE/20%
2019/09	78%	1.57	4.7/ 7.1/NE	5.4	9.2	.0	59.5	33.2	7.3	72.4	25.0	2.7	.0	78%	60.6	38.5	.4	.5	ENE/34%
2019/10	93%	1.71	5.5/ 8.1/NE	5.6	11.2	.7	44.2	47.8	7.2	72.8	21.9	4.9	.4	93%	77.0	21.0	1.4	.6	NE /36%
2019/11	100%	2.19	5.0/ 7.1/ENE	5.7	7.5	.0	27.4	54.4	18.2	64.0	36.0	.0	.0	100%	76.9	23.1	.0	.0	ENE/38%
2019/冬	73%	2.07	5.6/ 8.1/NE	5.6	8.1	.0	30.8	53.4	15.8	72.2	27.7	.1	.0	73%	80.8	19.0	.2	.0	NE /42%
2019/春	95%	1.36	4.4/ 7.2/NE	5.3	7.6	2.2	65.6	29.0	3.2	84.2	15.8	.0	.0	95%	62.9	31.2	5.6	.3	ENE/37%
2019/夏	89%	1.26	6.9/ 9.6/ENE	4.9	9.6	3.1	70.4	23.5	3.0	91.1	8.1	.7	.0	89%	27.3	33.1	39.5	.1	S /22%
2019/秋	90%	1.85	5.5/ 8.1/NE	5.6	11.2	.3	42.4	46.0	11.3	69.4	27.9	2.5	.2	90%	72.3	26.8	.6	.4	ENE/36%
2019/年	87%	1.61	6.9/ 9.6/ENE	5.3	11.2	1.5	53.7	37.0	7.9	79.7	19.4	.8	.0	87%	59.9	28.0	11.9	.2	ENE/29%

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表2.2.2　2019年馬祖海域 X 站修補前示性波高週期及波向重要統計量統計表

觀測	波高	H_s	H_s最大	T_p	T_p	小波	小浪	中浪	大浪	T_p	T_p	T_p	T_p	波向	波向	波向	波向	波向	主波向
日期	蒐集	平均	(波高/週期/波向)	平均	最大	<0.5m	~1.5m	~3m	>3m	<6s	6~8s	8~10s	>10s	蒐集	N~E	E~S	S~W	W~N	(百分比)
年、月	率	(m)	(m/s/來向)	(s)	(s)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	率	(%)	(%)	(%)	(%)	來向/%
2018/12	99%	.80	1.9/ 8.0/NE	7.5	12.7	32.3	64.1	3.5	.0	18.6	41.6	33.0	6.8	99%	100.0	.0	.0	.0	NE /82%
2019/01	99%	.65	1.4/ 7.2/NE	7.0	14.9	37.1	62.9	.0	.0	26.8	51.1	16.8	5.3	99%	100.0	.0	.0	.0	NE /80%
2019/02	61%	.62	1.8/ 8.4/NE	7.3	13.2	31.9	67.6	.5	.0	15.5	59.5	20.4	4.7	61%	100.0	.0	.0	.0	NE /84%
2019/03	98%	.52	1.5/ 7.8/NE	6.8	11.5	60.4	39.5	.1	.0	22.4	57.5	19.1	1.0	98%	100.0	.0	.0	.0	NE /74%
2019/04	89%	.44	1.4/ 5.5/NE	6.8	11.0	61.8	38.2	.0	.0	20.0	56.3	22.8	.8	89%	99.2	.3	.0	.5	NE /68%
2019/05	100%	.46	1.5/ 8.4/NE	7.3	12.5	67.8	32.2	.0	.0	25.0	40.3	22.8	11.9	100%	100.0	.0	.0	.0	NE /74%
2019/06	98%	.29	.9/ 6.3/NE	5.8	10.1	87.3	12.7	.0	.0	48.7	39.5	11.7	.1	98%	98.7	1.0	.0	.3	NE /61%
2019/07	99%	.26	.9/ 6.8/NE	6.8	14.2	89.3	10.7	.0	.0	43.1	27.4	17.8	11.8	99%	98.1	.9	.0	.9	NE /45%
2019/08	83%	.51	2.3/13.3/NE	8.0	14.6	59.3	38.4	2.3	.0	29.0	28.0	15.2	27.7	83%	99.8	.0	.0	.2	NE /66%
2019/09	98%	.65	1.5/ 9.7/NE	7.3	15.1	30.5	69.2	.3	.0	38.9	17.2	20.6	23.3	98%	100.0	.0	.0	.0	NE /64%
2019/10	99%	.65	1.7/10.8/NE	8.1	16.3	28.5	71.2	.3	.0	21.1	31.9	25.0	22.0	99%	100.0	.0	.0	.0	NE /67%
2019/11	99%	.82	1.7/ 9.2/NE	7.3	15.1	21.7	76.9	1.4	.0	22.5	35.9	35.3	6.3	99%	100.0	.0	.0	.0	NE /55%
2019/冬	87%	.70	1.9/ 8.0/NE	7.2	14.9	34.1	64.4	1.5	.0	21.1	49.2	23.9	5.8	87%	100.0	.0	.0	.0	NE /82%
2019/春	95%	.48	1.5/ 7.8/NE	7.0	12.5	63.4	36.5	.0	.0	22.6	51.1	21.6	4.7	95%	99.8	.1	.0	.1	NE /72%
2019/夏	93%	.34	2.3/13.3/NE	6.8	14.6	79.6	19.7	.7	.0	40.8	31.7	14.9	12.6	93%	98.8	.7	.0	.5	NE /57%
2019/秋	99%	.71	1.7/ 9.2/NE	7.6	16.3	26.9	72.4	.6	.0	27.4	28.4	27.0	17.2	99%	100.0	.0	.0	.0	NE /62%
2019/年	94%	.56	2.3/13.3/NE	7.2	16.3	51.2	48.1	.7	.0	28.1	39.8	21.9	10.2	94%	99.6	.2	.0	.2	NE /68%

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表2.2.3　2019年馬祖海域 A 站修補前示性波高週期及波向重要統計量統計表

觀測日期 年、月	波高蒐集率	H_s 平均 (m)	H_s最大 (波高/週期/波向) (m/s/來向)	T_p 平均 (s)	T_p 最大 (s)	小波 <0.5m (%)	小浪 ~1.5m (%)	中浪 ~3m (%)	大浪 >3m (%)	T_p <6s (%)	T_p 6~8s (%)	T_p 8~10s (%)	T_p >10s (%)	波向蒐集率	波向 N~E (%)	波向 E~S (%)	波向 S~W (%)	波向 W~N (%)	主波向 (百分比) 來向/%
2018/12	100%	.54	1.1/ 4.8/NE	6.3	11.8	43.7	56.3	.0	.0	47.6	22.9	23.6	5.9	100%	4.3	16.2	43.7	35.8	S /24%
2019/01	98%	.45	.9/ 8.4/N	5.8	14.9	63.6	36.4	.0	.0	59.2	24.1	12.9	3.8	98%	5.1	19.8	41.7	33.4	S /24%
2019/02	95%	.43	.8/ 9.1/NW	6.1	12.8	66.5	33.5	.0	.0	48.8	34.9	11.3	5.0	95%	6.3	18.3	44.9	30.5	S /23%
2019/03	100%	.39	1.0/ 5.5/SSE	5.8	12.1	73.9	26.1	.0	.0	52.9	33.5	11.3	2.3	100%	4.4	22.3	49.4	23.8	S /30%
2019/04	52%	.42	.9/ 8.6/NNE	5.6	10.4	65.9	34.1	.0	.0	53.0	37.1	9.7	.3	52%	6.7	24.7	42.7	25.8	S /24%
2019/05	0																		
2019/06	0																		
2019/07	0																		
2019/08	7%	.74	1.0/ 7.1/NE	6.1	8.2	5.7	94.3	.0	.0	39.6	56.6	3.8	.0	7%	100.0	.0	.0	.0	NE /72%
2019/09	95%	.77	1.8/ 9.4/NE	7.4	15.4	18.2	79.5	2.3	.0	35.3	25.3	18.2	21.2	95%	100.0	.0	.0	.0	NE /72%
2019/10	99%	.77	2.0/ 9.1/NE	7.8	15.6	17.1	80.8	2.0	.0	21.8	41.2	20.7	16.3	99%	99.9	.0	.0	.1	NE /78%
2019/11	99%	.99	2.0/ 8.1/NE	7.4	14.2	13.8	77.8	8.4	.0	18.3	45.7	30.6	5.4	99%	99.9	.1	.0	.0	NE /82%
2019/冬	98%	.48	1.1/ 4.8/NE	6.1	14.9	57.5	42.5	.0	.0	52.0	26.9	16.1	4.9	98%	5.2	18.1	43.4	33.4	S /24%
2019/春	51%	.40	1.0/ 5.5/SSE	5.7	12.1	71.2	28.8	.0	.0	52.9	34.7	10.8	1.6	51%	5.2	23.1	47.2	24.5	S /28%
2019/夏	2%	.74	1.0/ 7.1/NE	6.1	8.2	5.7	94.3	.0	.0	39.6	56.6	3.8	.0	2%	100.0	.0	.0	.0	NE /72%
2019/秋	98%	.84	2.0/ 8.1/NE	7.6	15.6	16.4	79.4	4.3	.0	24.9	37.6	23.2	14.2	98%	99.9	.0	.0	.0	NE /77%
2019/年	62%	.61	2.0/ 8.1/NE	6.6	15.6	43.6	54.7	1.7	.0	41.4	33.0	17.7	7.9	62%	43.4	11.8	26.6	18.1	NE /32%

DISV3B.BAT　測站編號:MSA　港灣技術研究中心

表2.2.4　2019年馬祖海域2站修補前示性波高週期及波向重要統計量統計表

觀測	波高	H_s	H_s最大	T_p	T_p	小波	小浪	中浪	大浪	T_p	T_p	T_p	T_p	波向	波向	波向	波向	波向	主波向
日期	蒐集	平均	(波高/週期/波向)	平均	最大	<0.5m	~1.5m	~3m	>3m	<6s	6~8s	8~10s	>10s	蒐集	N~E	E~S	S~W	W~N	(百分比)
年、月	率	(m)	(m/s/來向)	(s)	(s)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	率	(%)	(%)	(%)	(%)	來向/%
2018/12	99%	.47	.9/ 9.0/w	7.9	12.3	55.3	44.7	.0	.0	19.0	23.2	43.5	14.4	99%	.0	.0	99.6	.4	wsw/43%
2019/01	1%	.57	.6/ 8.3/sw	8.3	9.1	.0	100.0	.0	.0	.0	40.0	60.0	.0	1%	.0	.0	100.0	.0	wsw/70%
2019/02	27%	.38	.5/ 5.1/wsw	8.6	13.1	100.0	.0	.0	.0	7.1	48.4	17.0	27.5	27%	.0	.0	99.5	.5	sw /47%
2019/03	99%	.38	1.5/ 4.5/ssw	6.9	12.5	86.2	13.8	.0	.0	29.9	44.5	19.6	6.0	99%	.0	.9	98.9	.1	sw /46%
2019/04	99%	.41	1.8/ 5.5/ssw	6.1	9.3	80.2	19.1	.7	.0	42.6	45.6	11.8	.0	99%	.0	2.8	96.9	.3	sw /37%
2019/05	100%	.35	1.0/ 5.9/s	6.9	30.1	87.0	13.0	.0	.0	39.8	34.4	15.4	10.4	100%	.0	.5	99.3	.1	sw /46%
2019/06	100%	.61	2.2/ 6.2/s	5.5	9.0	50.6	45.7	3.8	.0	67.4	30.2	2.4	.0	100%	.1	2.4	97.5	.0	ssw/39%
2019/07	100%	1.00	2.5/ 6.8/s	5.7	11.8	26.7	51.1	22.2	.0	59.0	34.0	4.6	2.4	100%	.0	.7	99.3	.0	ssw/60%
2019/08	93%	.77	3.0/ 8.0/s	7.0	14.4	47.6	41.6	10.7	.1	34.0	38.9	20.3	6.8	93%	.0	.4	99.6	.0	ssw/52%
2019/09	100%	.44	1.0/12.4/sw	8.2	15.3	70.6	29.4	.0	.0	25.1	20.8	26.4	27.8	100%	.0	.1	99.9	.0	sw /42%
2019/10	91%	.43	1.3/ 5.7/s	8.3	17.1	76.4	23.6	.0	.0	27.7	23.3	24.3	24.6	91%	.0	.1	99.9	.0	wsw/42%
2019/11	97%	.46	1.1/ 6.1/w	8.1	15.0	59.1	40.9	.0	.0	15.4	30.1	38.0	16.5	97%	.0	.0	99.7	.3	wsw/54%
2019/冬	43%	.45	.9/ 9.0/w	8.0	13.1	63.4	36.6	.0	.0	16.5	28.3	38.5	16.8	43%	.0	.0	99.6	.4	wsw/43%
2019/春	99%	.38	1.8/ 5.5/ssw	6.6	30.1	84.5	15.2	.2	.0	37.4	41.4	15.7	5.5	99%	.0	1.4	98.4	.2	sw /43%
2019/夏	98%	.79	3.0/ 8.0/s	6.1	14.4	41.4	46.2	12.3	.0	53.8	34.3	8.9	3.0	98%	.0	1.2	98.8	.0	ssw/50%
2019/秋	96%	.45	1.3/ 5.7/s	8.2	17.1	68.7	31.3	.0	.0	22.7	24.7	29.6	23.0	96%	.0	.1	99.8	.1	wsw/43%
2019/年	84%	.53	3.0/ 8.0/s	7.1	30.1	64.7	31.6	3.7	.0	35.4	32.9	20.5	11.2	84%	.0	.8	99.1	.1	sw /34%

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表2.2.5　2019年馬祖海域3站修補前示性波高週期及波向重要統計量統計表

觀測日期 年、月	波高 蒐集率	H_s 平均 (m)	H_s最大 (波高/週期/波向) (m/s/來向)	T_p 平均 (s)	T_p 最大 (s)	小波 <0.5m (%)	小浪 ~1.5m (%)	中浪 ~3m (%)	大浪 >3m (%)	T_p <6s (%)	T_p 6~8s (%)	T_p 8~10s (%)	T_p >10s (%)	波向 蒐集率	波向 N~E (%)	波向 E~S (%)	波向 S~W (%)	波向 W~N (%)	主波向 (百分比) 來向/%
2018/12	0																		
2019/01	0																		
2019/02	0																		
2019/03	0																		
2019/04	0																		
2019/05	0																		
2019/06	0																		
2019/07	0																		
2019/08	29%	.62	1.3/ 5.5/NNE	4.9	9.2	35.8	64.2	.0	.0	76.6	18.8	4.6	.0	29%	50.5	1.4	28.9	19.3	N /33%
2019/09	100%	.69	1.8/ 6.2/N	6.6	14.6	22.7	77.0	.3	.0	62.4	9.6	7.1	20.9	100%	50.7	.7	7.2	41.4	N /39%
2019/10	99%	.69	1.9/ 7.0/NNE	6.6	15.6	24.1	74.9	.9	.0	56.9	20.9	7.3	14.9	99%	41.7	.7	12.1	45.5	N /36%
2019/11	100%	.86	1.8/ 5.3/NNE	5.8	14.3	13.7	84.8	1.5	.0	65.3	17.9	11.4	5.4	100%	66.8	.0	3.3	29.8	N /42%
2019/冬	0																		
2019/春	0																		
2019/夏	10%	.62	1.3/ 5.5/NNE	4.9	9.2	35.8	64.2	.0	.0	76.6	18.8	4.6	.0	10%	50.5	1.4	28.9	19.3	N /33%
2019/秋	100%	.74	1.9/ 7.0/NNE	6.3	15.6	20.2	78.9	.9	.0	61.5	16.2	8.6	13.8	100%	53.0	.5	7.6	39.0	N /39%
2019/年	27%	.73	1.9/ 7.0/NNE	6.2	15.6	21.6	77.5	.8	.0	62.9	16.4	8.2	12.5	27%	52.7	.5	9.5	37.2	N /39%

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表2.2.6　2019年馬祖海域4站修補前示性波高週期及波向重要統計量統計表

觀測	波高	H_s	H_s最大	T_p	T_p	小波	小浪	中浪	大浪	T_p	T_p	T_p	T_p	波向	波向	波向	波向	波向	主波向
日期	蒐集	平均	(波高/週期/波向)	平均	最大	<0.5m	~1.5m	~3m	>3m	<6s	6~8s	8~10s	>10s	蒐集	N~E	E~S	S~W	W~N	(百分比)
年、月	率	(m)	(m/s/來向)	(s)	(s)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	率	(%)	(%)	(%)	(%)	來向/%
2018/12	0																		
2019/01	0																		
2019/02	0																		
2019/03	0																		
2019/04	0																		
2019/05	0																		
2019/06	0																		
2019/07	0																		
2019/08	14%	.35	.7/ 6.0/s	6.5	8.1	98.0	2.0	.0	.0	28.4	66.7	4.9	.0	14%	.0	.0	99.0	1.0	wsw/46%
2019/09	100%	.41	.9/13.8/sw	8.3	14.8	77.7	22.3	.0	.0	22.1	22.1	28.0	27.7	100%	.0	.0	95.8	4.2	wsw/50%
2019/10	99%	.40	1.3/ 5.4/wsw	8.3	16.6	85.1	14.9	.0	.0	23.8	26.4	25.6	24.2	99%	.0	.0	94.5	5.5	wsw/53%
2019/11	100%	.42	.7/ 9.7/w	8.2	15.5	73.0	27.0	.0	.0	11.7	30.6	42.0	15.7	100%	.0	.0	94.3	5.7	wsw/54%
2019/冬	0																		
2019/春	0																		
2019/夏	5%	.35	.7/ 6.0/s	6.5	8.1	98.0	2.0	.0	.0	28.4	66.7	4.9	.0	5%	.0	.0	99.0	1.0	wsw/46%
2019/秋	100%	.41	1.3/ 5.4/wsw	8.3	16.6	78.7	21.3	.0	.0	19.3	26.4	31.8	22.6	100%	.0	.0	94.9	5.1	wsw/52%
2019/年	26%	.41	1.3/ 5.4/wsw	8.2	16.6	79.5	20.5	.0	.0	19.7	28.2	30.6	21.6	26%	.0	.0	95.0	5.0	wsw/52%

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2.3　2019 年馬祖海域主要測站 1(修補後)與其他測站(修補前)波浪歷線比較圖

Wave H_s in Ma-Tsu Harbor of MSY0 at 2019

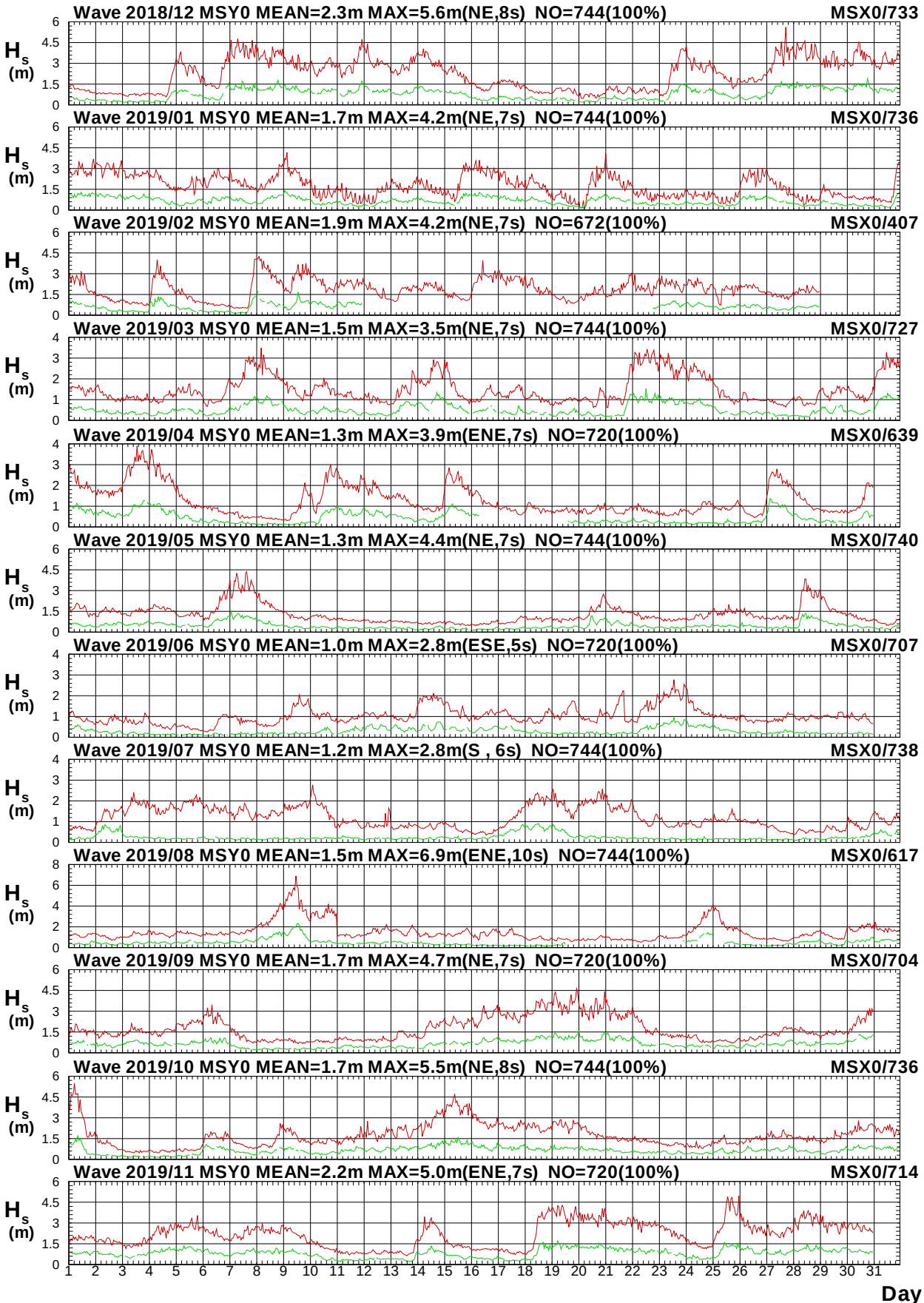


圖2.3.1a　2019年每月馬祖海域 Y 站與 X 站波高比較圖

V18CMSY0.1HA V18CMSX0.1H0 V191MSY0.1HA V191MSX0.1H0 V192MSY0.1HA V192MSX0.1H0
V193MSY0.1HA V193MSX0.1H0 V194MSY0.1HA V194MSX0.1H0 V195MSY0.1HA V195MSX0.1H0

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Wave T_p in Ma-Tsu Harbor of MSY0 at 2019

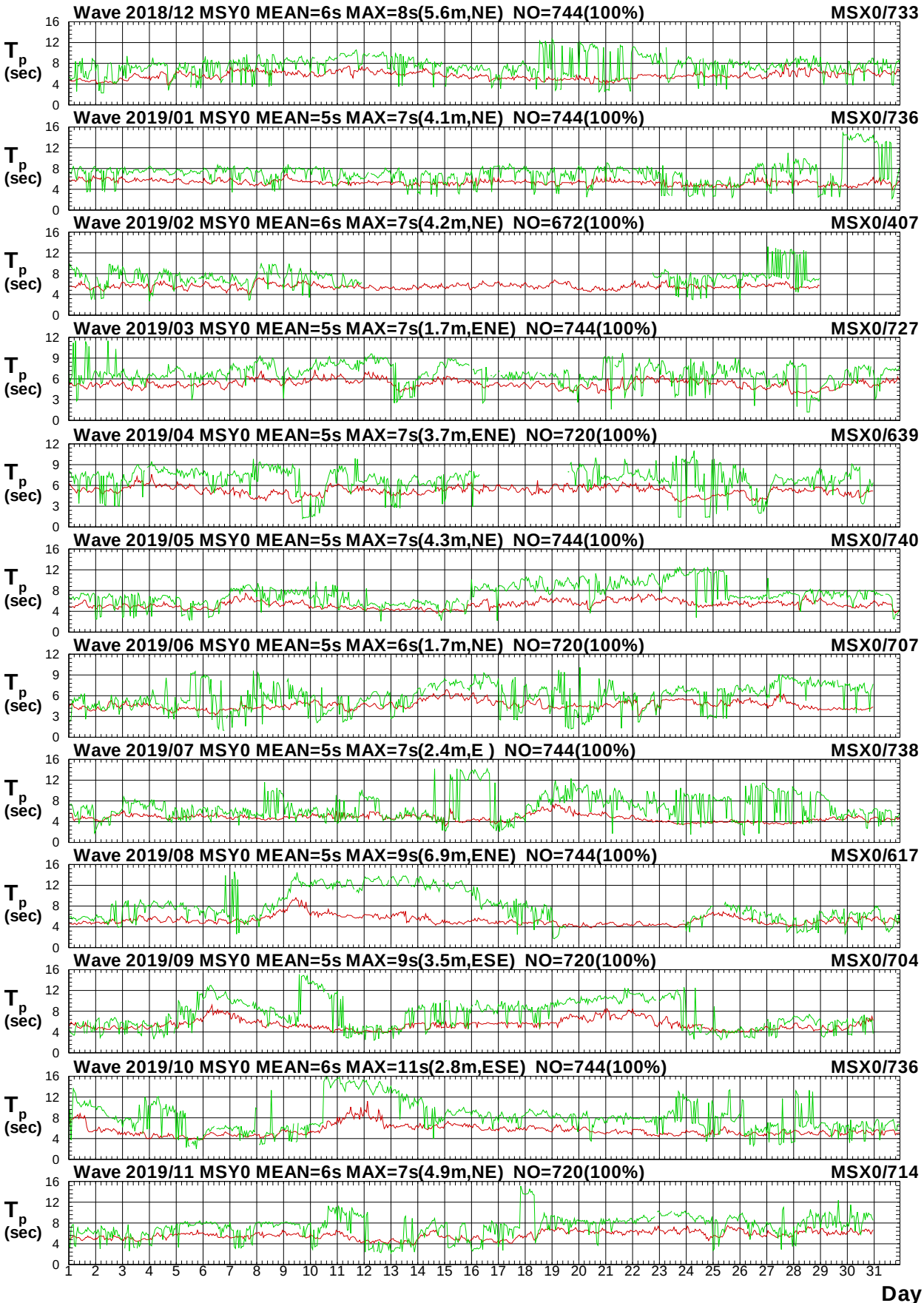


圖2.3.1b　2019年每月馬祖海域 Y 站與 X 站週期比較圖

V18CMSY0.1HA V18CMSX0.1H0 V191MSY0.1HA V191MSX0.1H0 V192MSY0.1HA V192MSX0.1H0
V193MSY0.1HA V193MSX0.1H0 V194MSY0.1HA V194MSX0.1H0 V195MSY0.1HA V195MSX0.1H0

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Wave Direction in Ma-Tsu Harbor of MSY0 at 2019

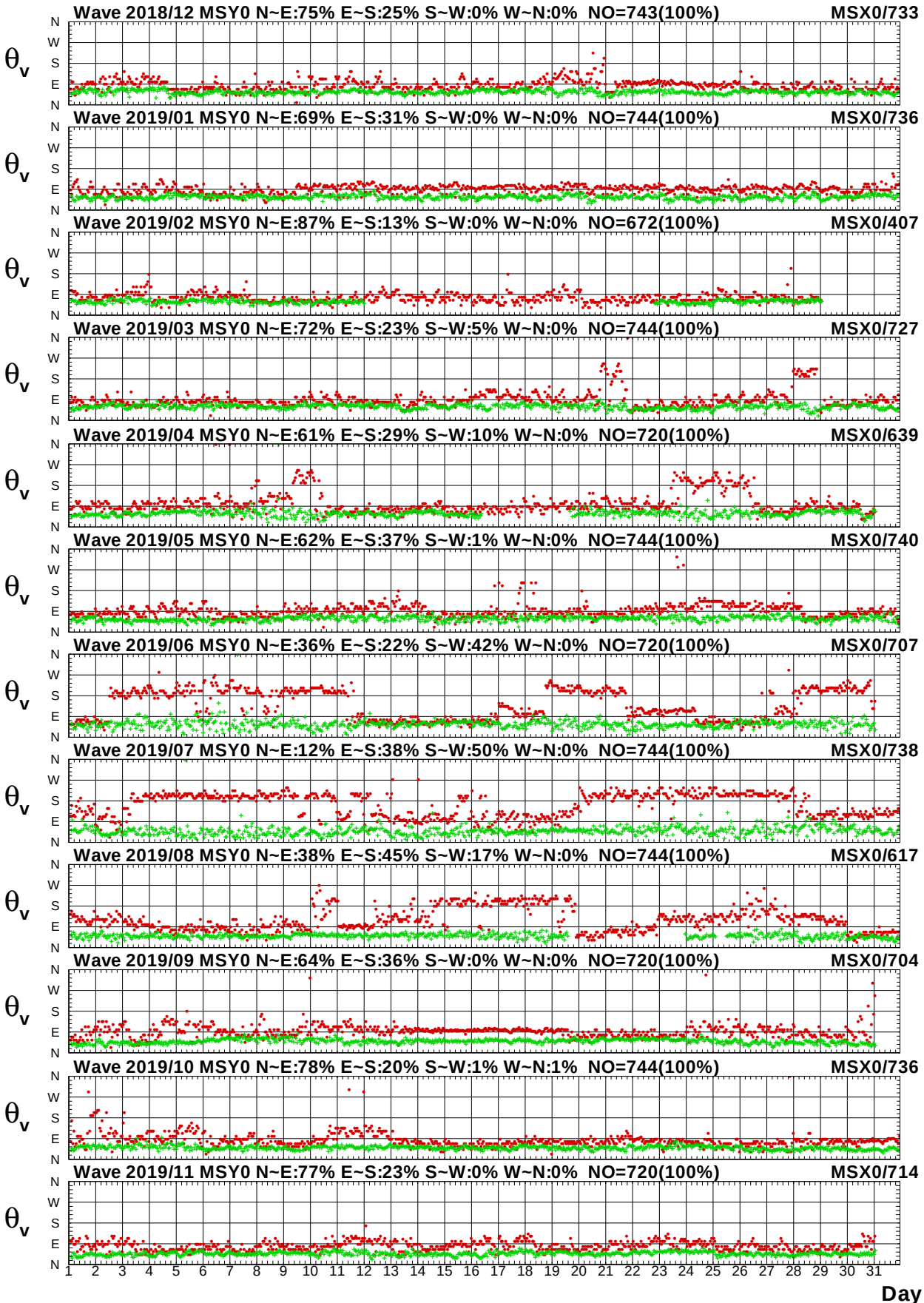


圖2.3.1c　2019年每月馬祖海域 Y 站與 X 站波向比較圖

V18CMSY0.1HA V18CMSX0.1H0 V191MSY0.1HA V191MSX0.1H0 V192MSY0.1HA V192MSX0.1H0
V193MSY0.1HA V193MSX0.1H0 V194MSY0.1HA V194MSX0.1H0 V195MSY0.1HA V195MSX0.1H0

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Wave H_s in Ma-Tsu Harbor of MSY0 at 2019

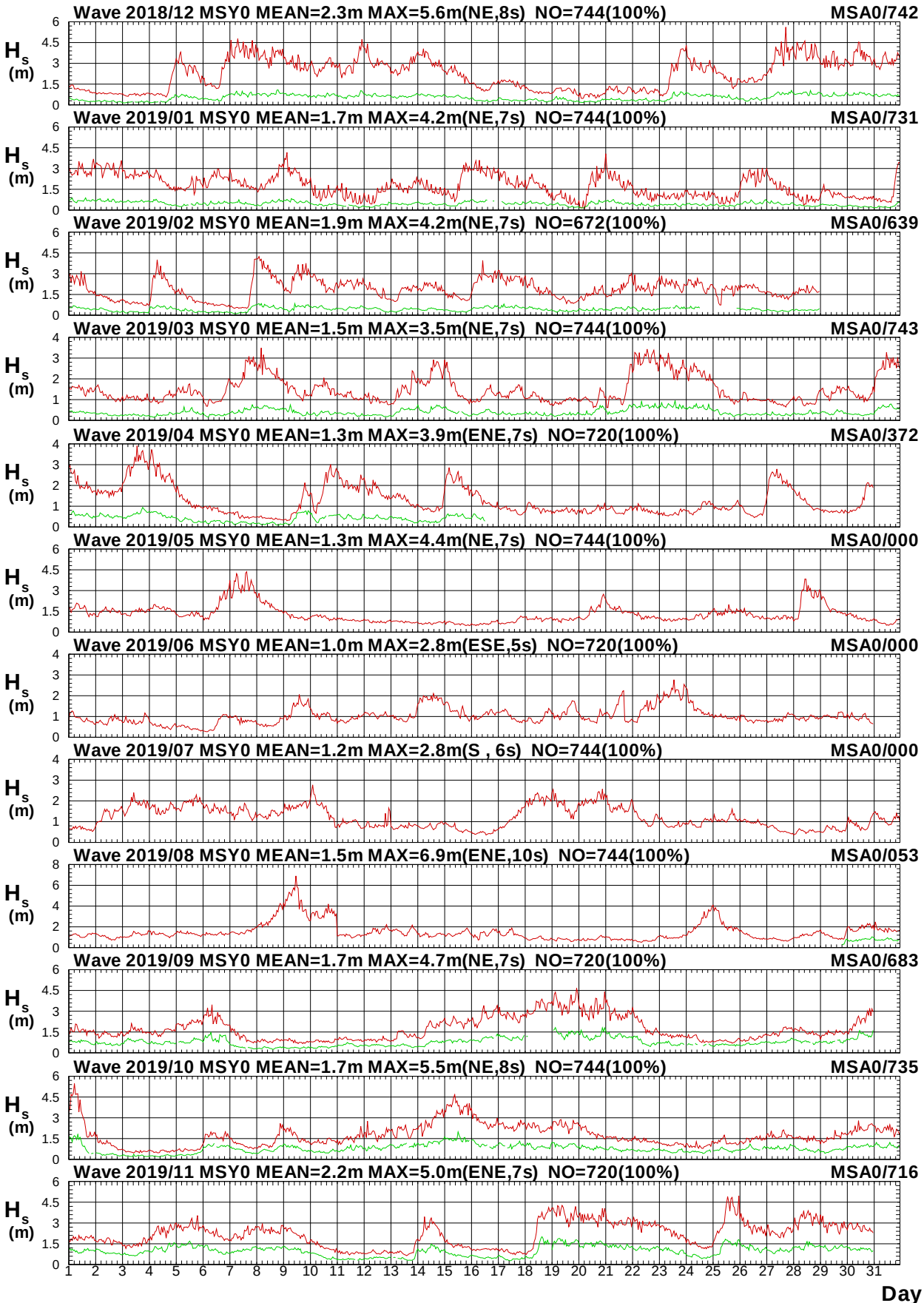


圖2.3.2a　2019年每月馬祖海域 Y 站與 A 站波高比較圖

V18CMSY0.1HA V18CMSA0.1H0 V191MSY0.1HA V191MSA0.1H0 V192MSY0.1HA V192MSA0.1H0
V193MSY0.1HA V193MSA0.1H0 V194MSY0.1HA V194MSA0.1H0 V195MSY0.1HA V195MSA0.1H0

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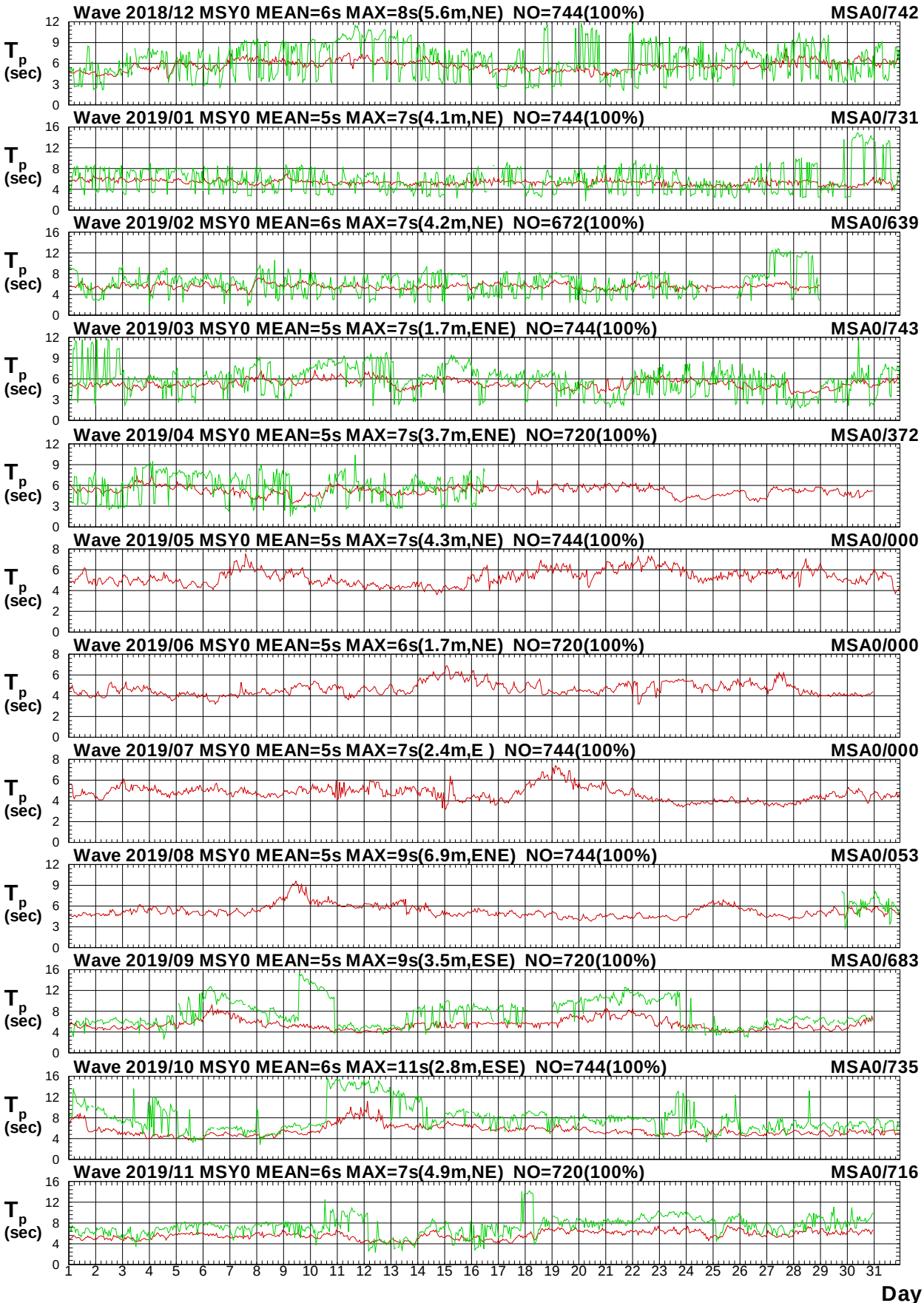


圖2.3.2b　2019年每月馬祖海域 Y 站與 A 站週期比較圖

V18CMSY0.1HA V18CMSA0.1H0 V191MSY0.1HA V191MSA0.1H0 V192MSY0.1HA V192MSA0.1H0
V193MSY0.1HA V193MSA0.1H0 V194MSY0.1HA V194MSA0.1H0 V195MSY0.1HA V195MSA0.1H0

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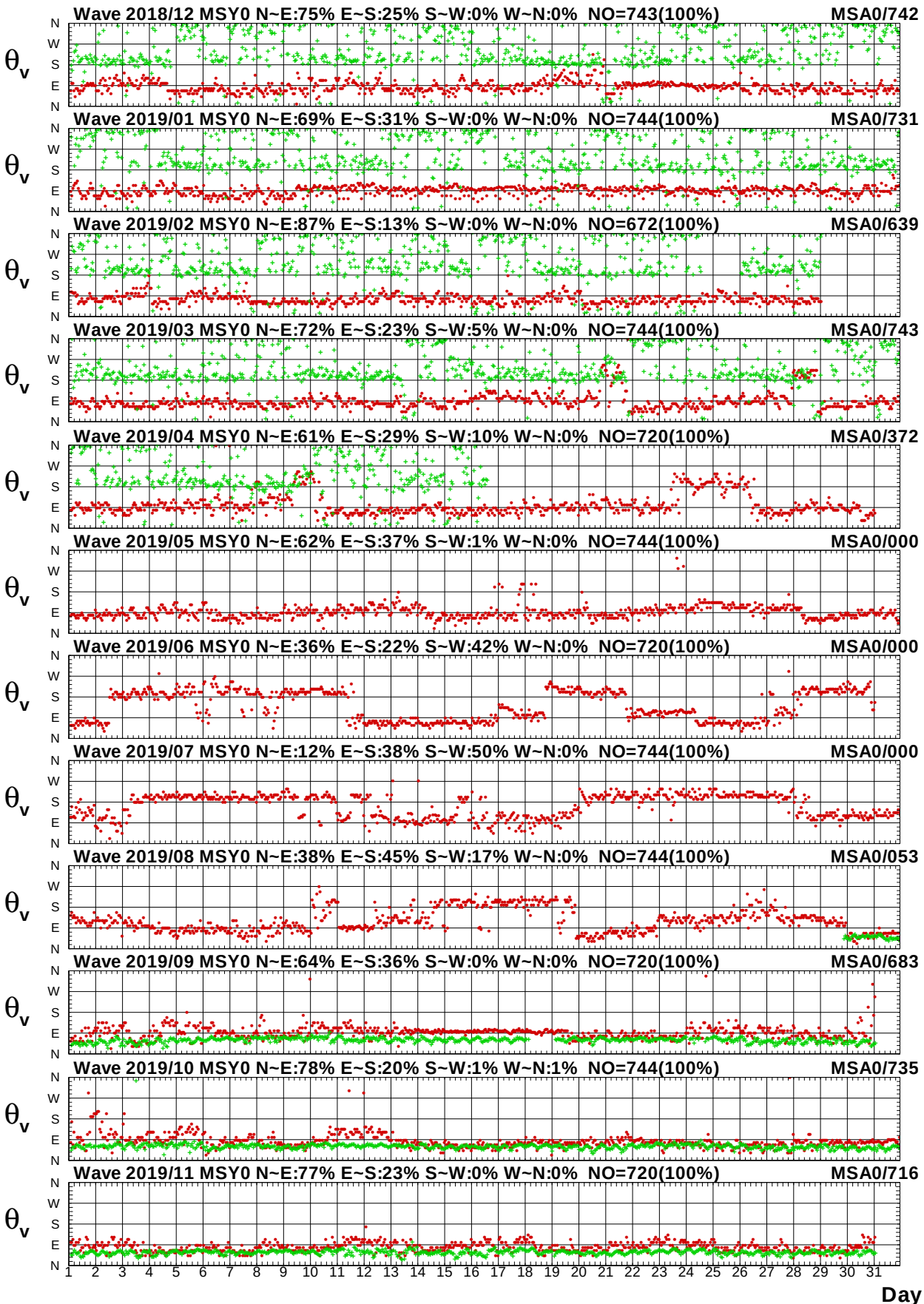


圖2.3.2c　2019年每月馬祖海域 Y 站與 A 站波向比較圖

V18CMSY0.1HA V18CMSA0.1H0 V191MSY0.1HA V191MSA0.1H0 V192MSY0.1HA V192MSA0.1H0
V193MSY0.1HA V193MSA0.1H0 V194MSY0.1HA V194MSA0.1H0 V195MSY0.1HA V195MSA0.1H0

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Wave H_s in Ma-Tsu Harbor of MSY0 at 2019

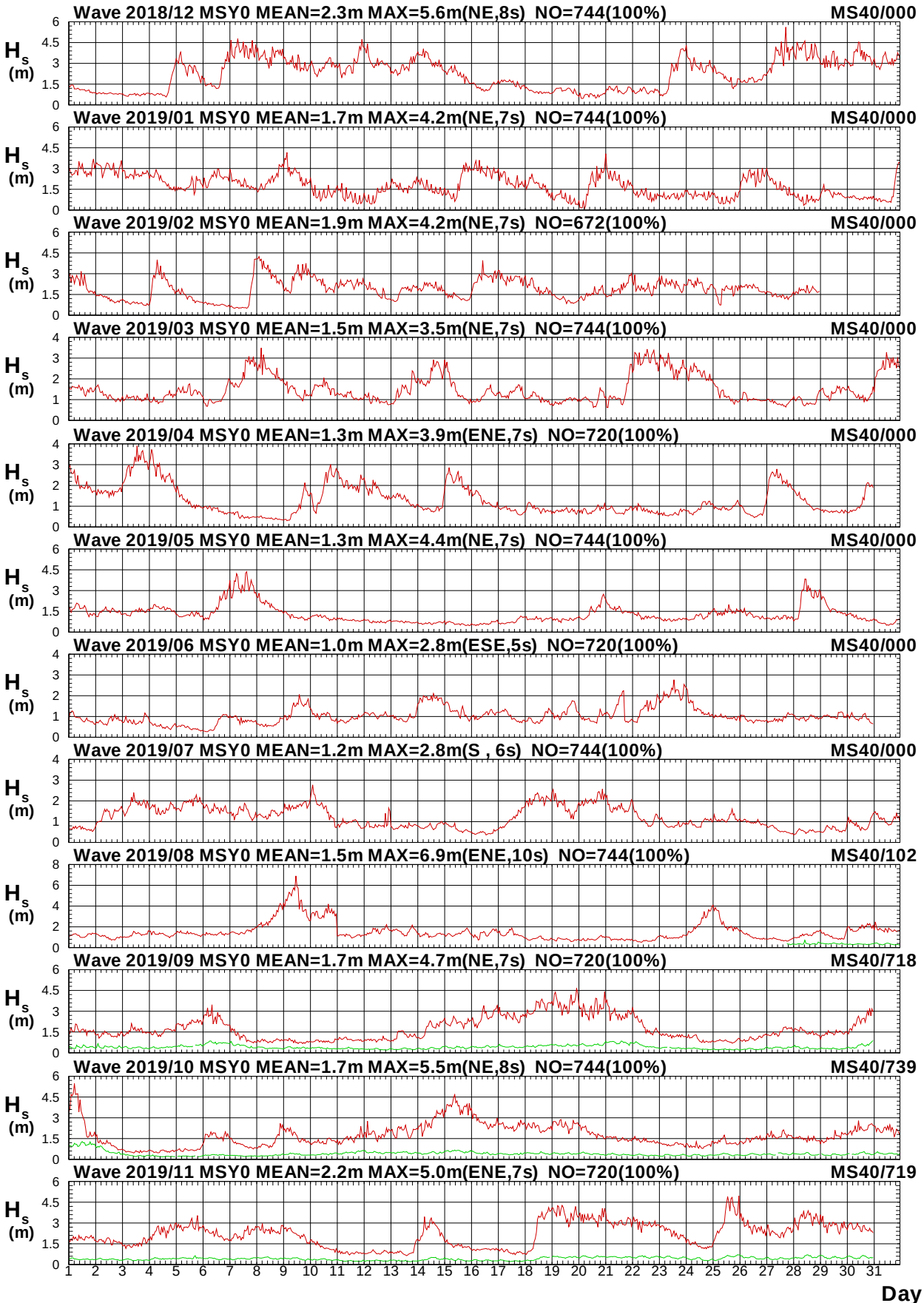


圖2.3.3a　2019年每月馬祖海域 Y 站與4站波高比較圖

V18CMSY0.1HA V18CMS40.1H0 V191MSY0.1HA V191MS40.1H0 V192MSY0.1HA V192MS40.1H0
V193MSY0.1HA V193MS40.1H0 V194MSY0.1HA V194MS40.1H0 V195MSY0.1HA V195MS40.1H0

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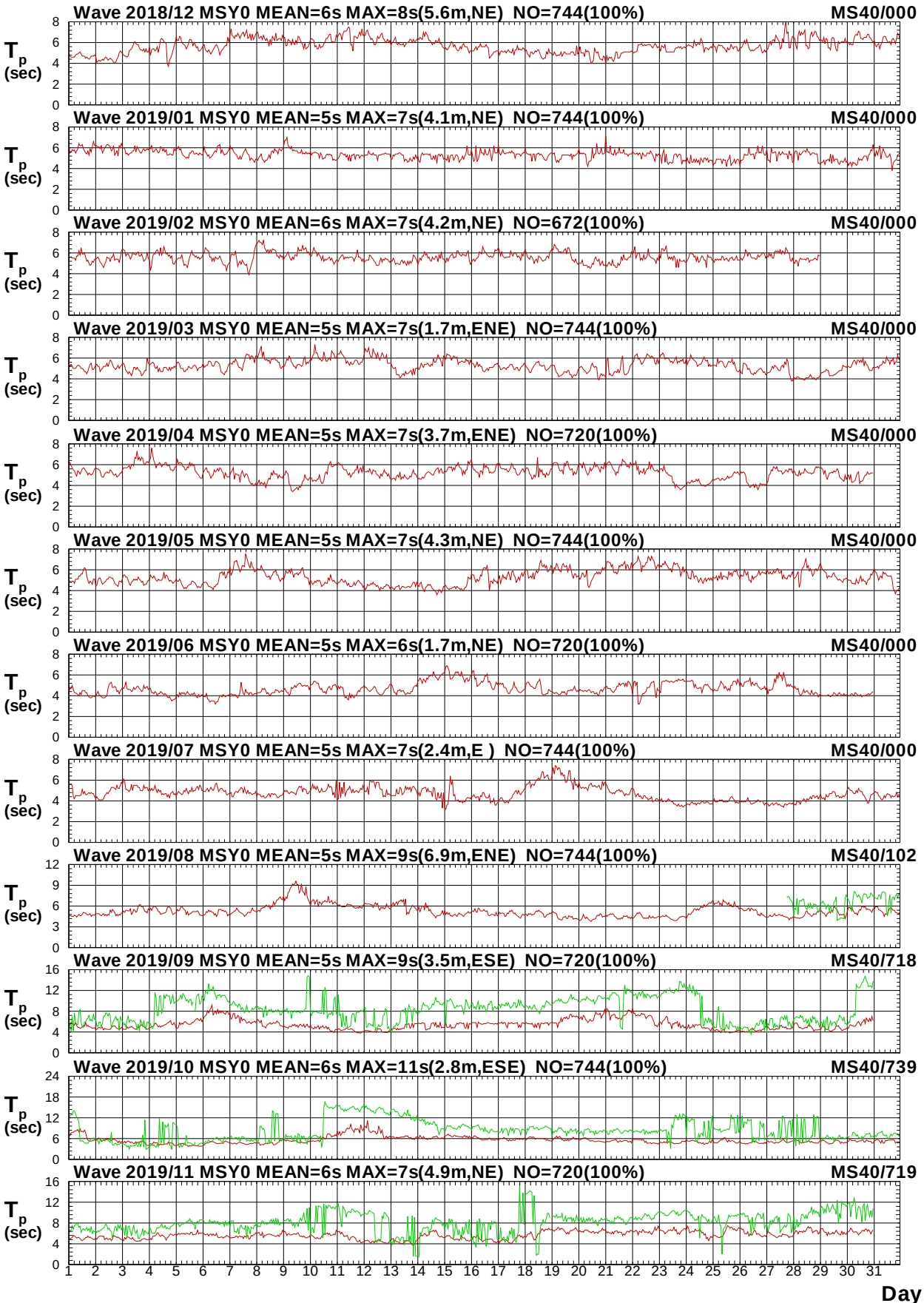


圖2.3.3b　2019年每月馬祖海域 Y 站與4站週期比較圖

V18CMSY0.1HA V18CMS40.1H0 V191MSY0.1HA V191MS40.1H0 V192MSY0.1HA V192MS40.1H0
V193MSY0.1HA V193MS40.1H0 V194MSY0.1HA V194MS40.1H0 V195MSY0.1HA V195MS40.1H0

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Wave Direction in Ma-Tsu Harbor of MSY0 at 2019

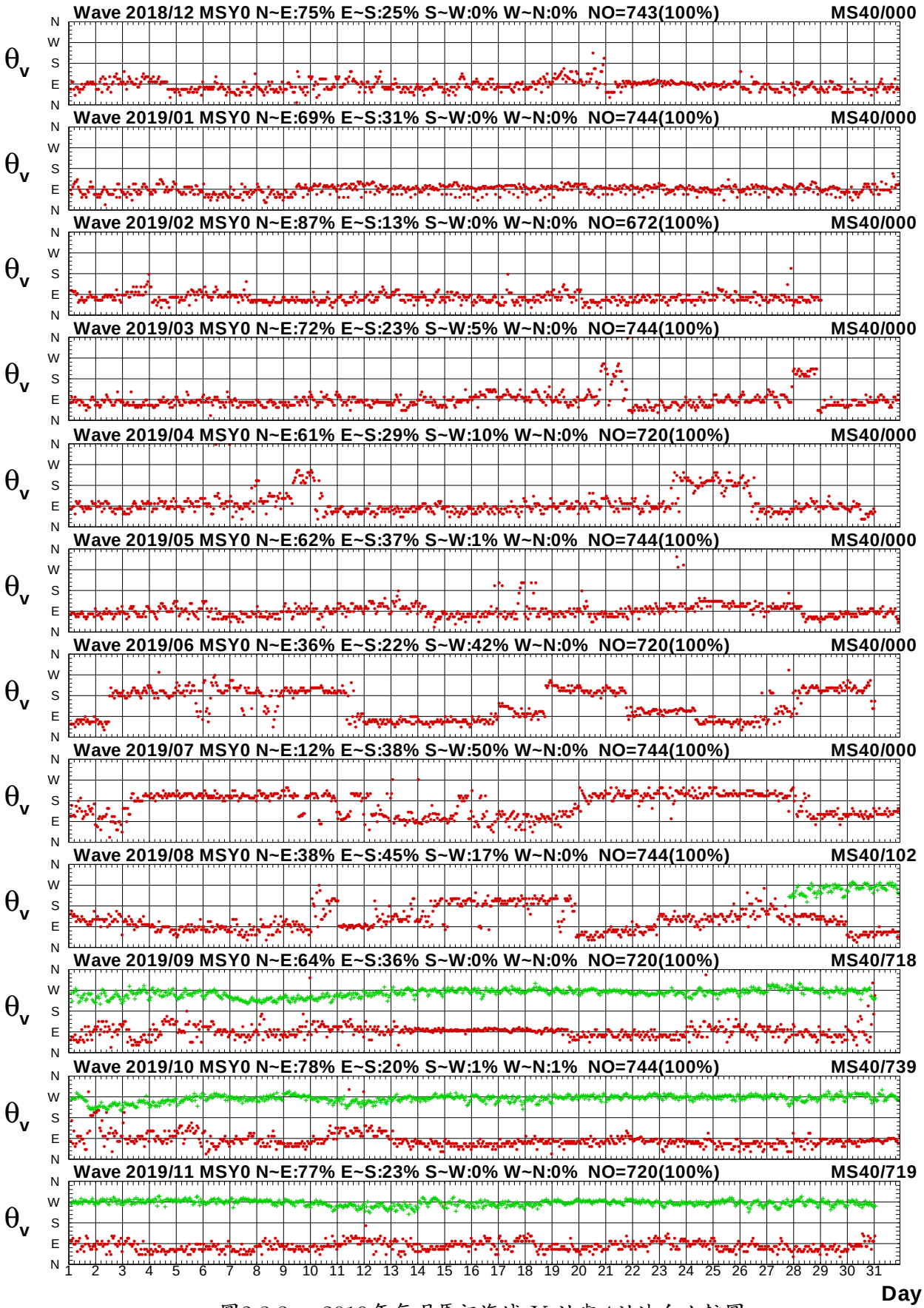


圖2.3.3c　2019年每月馬祖海域 Y 站與4站波向比較圖

V18CMSY0.1HA V18CMS40.1H0 V191MSY0.1HA V191MS40.1H0 V192MSY0.1HA V192MS40.1H0
V193MSY0.1HA V193MS40.1H0 V194MSY0.1HA V194MS40.1H0 V195MSY0.1HA V195MS40.1H0

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Wave H_s in Ma-Tsu Harbor of MSY0 at 2019

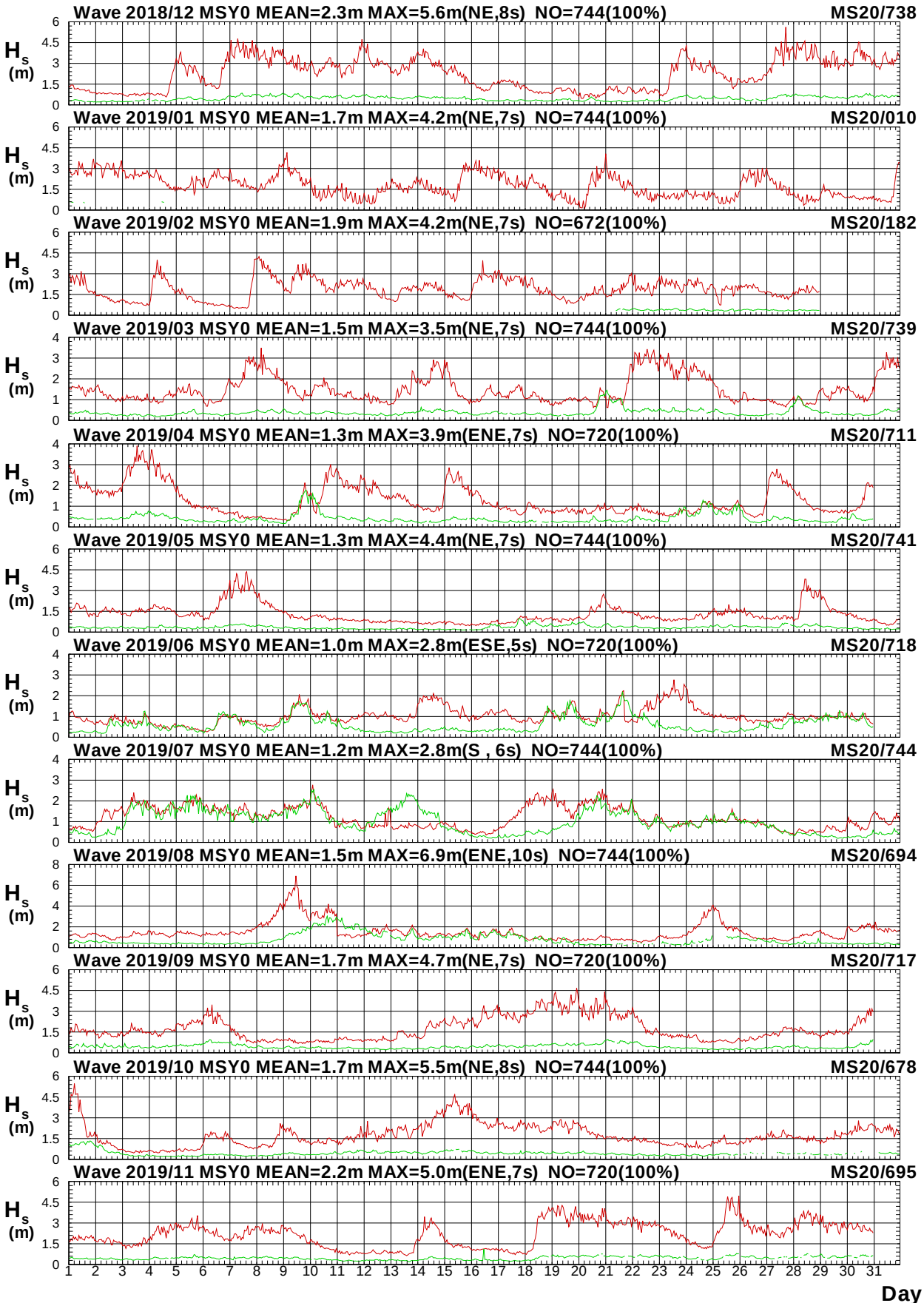


圖2.3.4a　2019年每月馬祖海域 Y 站與2站波高比較圖

V18CMSY0.1HA V18CMS20.1H0 V191MSY0.1HA V191MS20.1H0 V192MSY0.1HA V192MS20.1H0
V193MSY0.1HA V193MS20.1H0 V194MSY0.1HA V194MS20.1H0 V195MSY0.1HA V195MS20.1H0

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Wave T_p in Ma-Tsu Harbor of MSY0 at 2019

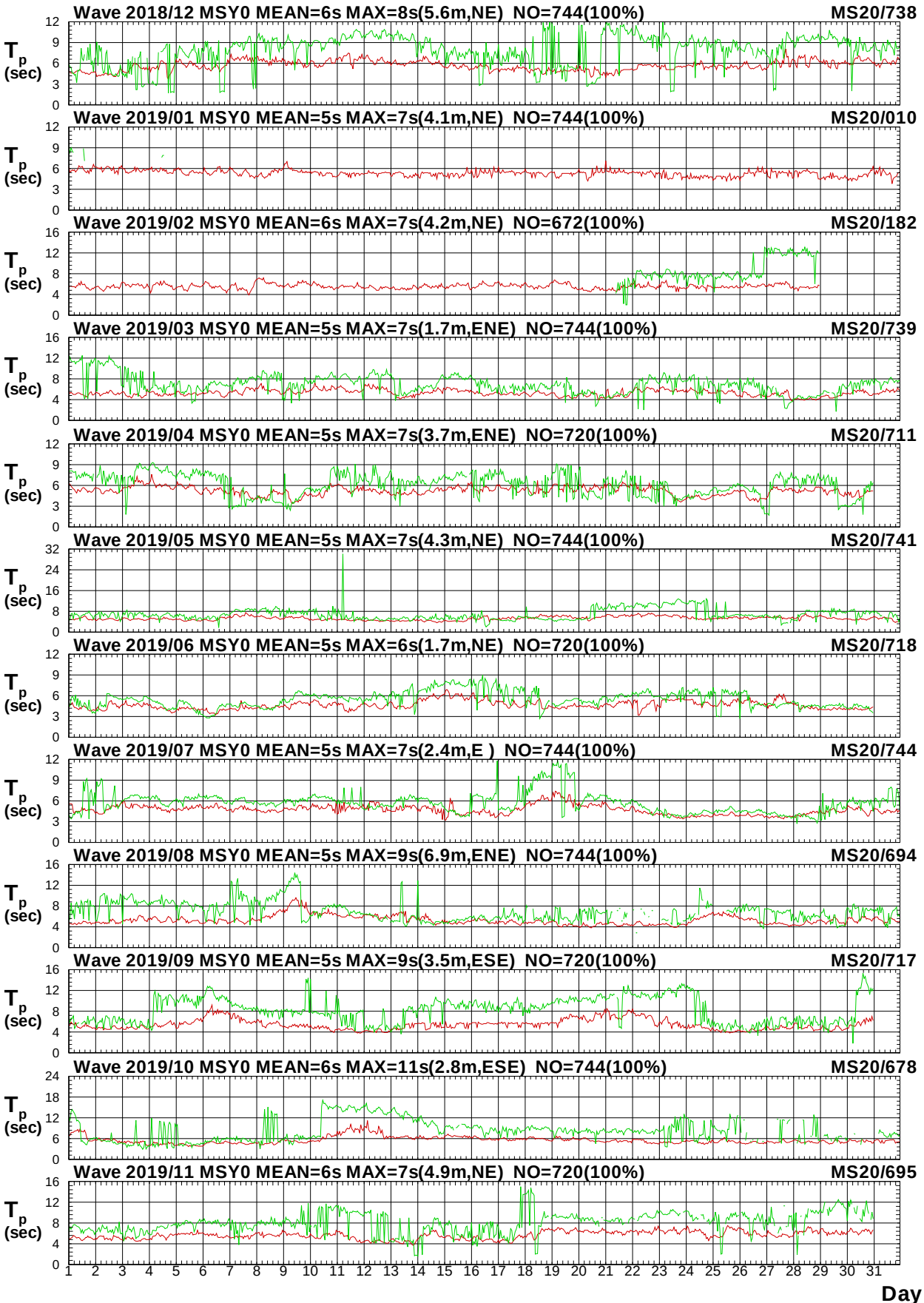


圖2.3.4b　2019年每月馬祖海域 Y 站與2站週期比較圖

V18CMSY0.1HA V18CMS20.1H0 V191MSY0.1HA V191MS20.1H0 V192MSY0.1HA V192MS20.1H0
V193MSY0.1HA V193MS20.1H0 V194MSY0.1HA V194MS20.1H0 V195MSY0.1HA V195MS20.1H0

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Wave Direction in Ma-Tsu Harbor of MSY0 at 2019

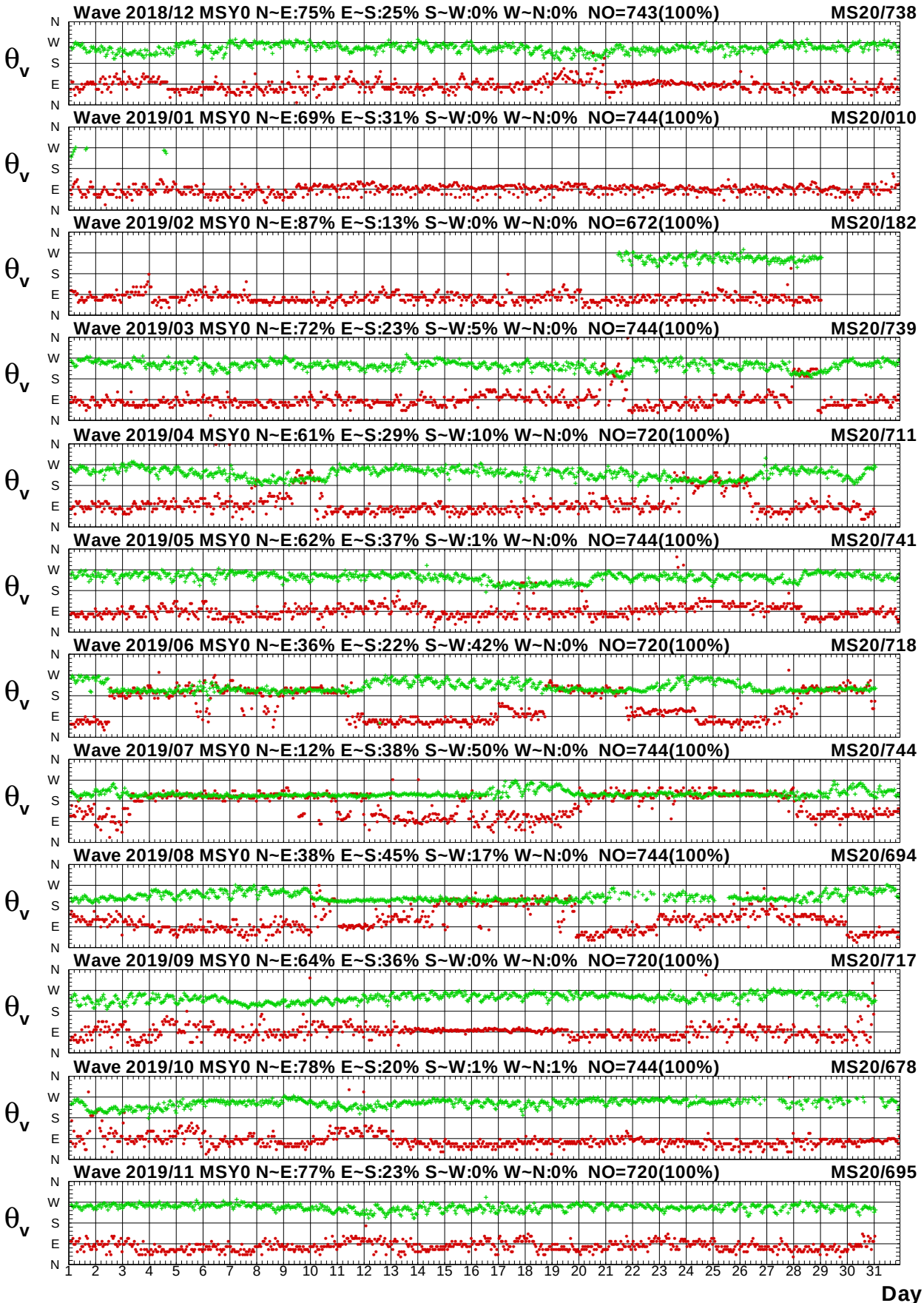


圖2.3.4c　2019年每月馬祖海域 Y 站與2站波向比較圖

V18CMSY0.1HA V18CMS20.1H0 V191MSY0.1HA V191MS20.1H0 V192MSY0.1HA V192MS20.1H0
V193MSY0.1HA V193MS20.1H0 V194MSY0.1HA V194MS20.1H0 V195MSY0.1HA V195MS20.1H0

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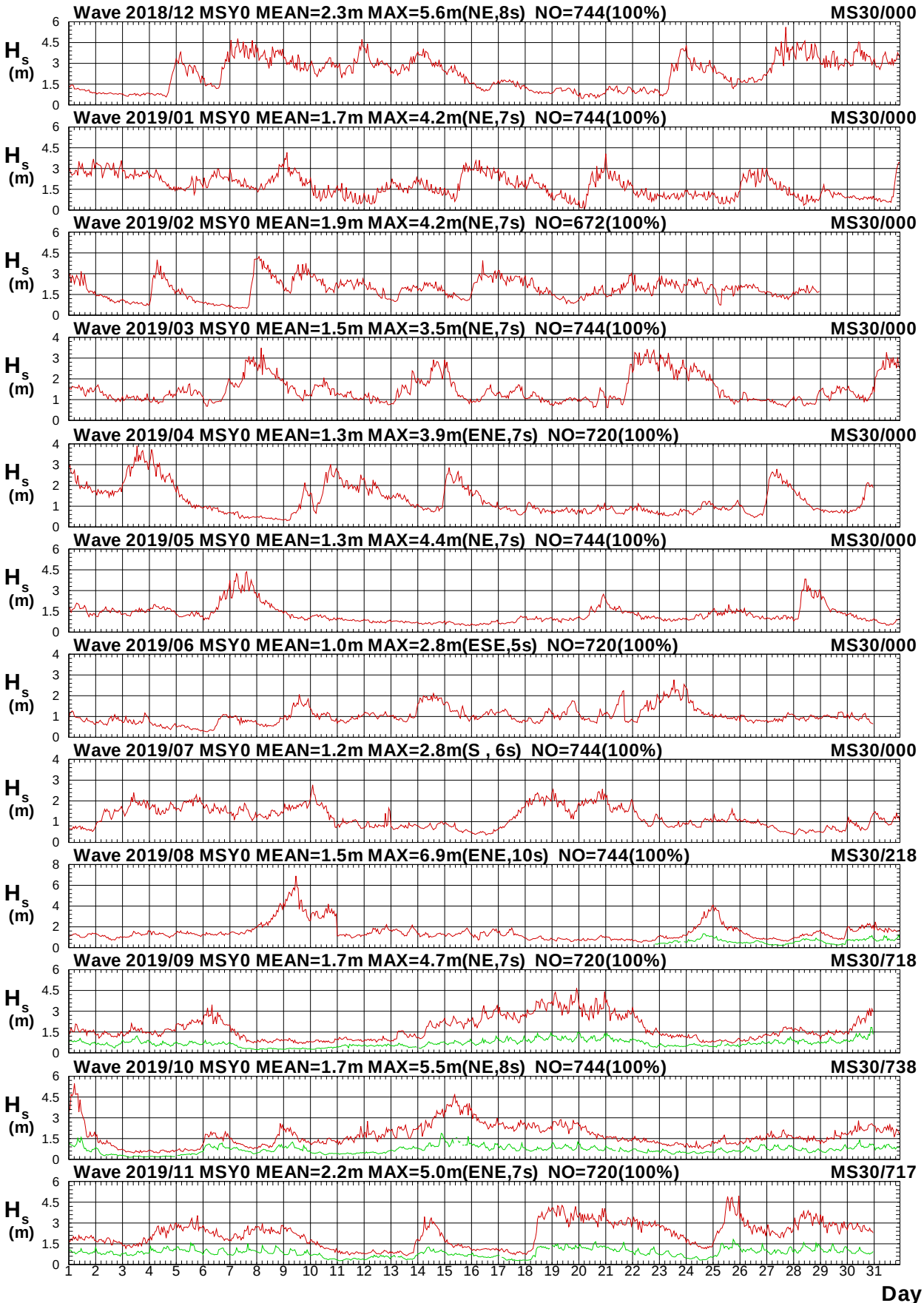


圖2.3.5a　2019年每月馬祖海域 Y 站與3站波高比較圖

V18CMSY0.1HA V18CMS30.1H0 V191MSY0.1HA V191MS30.1H0 V192MSY0.1HA V192MS30.1H0
V193MSY0.1HA V193MS30.1H0 V194MSY0.1HA V194MS30.1H0 V195MSY0.1HA V195MS30.1H0

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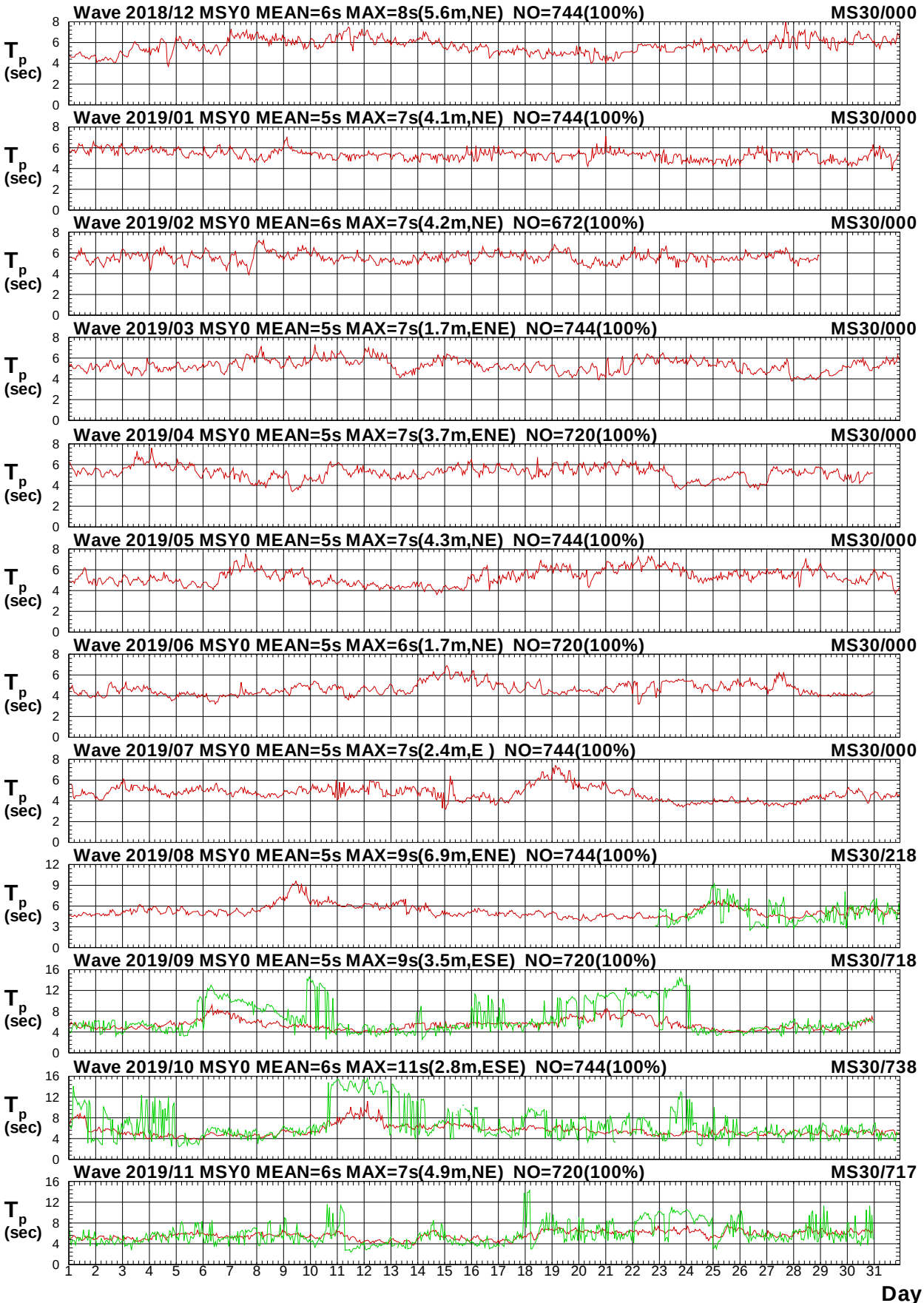


圖2.3.5b　2019年每月馬祖海域 Y 站與3站週期比較圖

V18CMSY0.1HA V18CMS30.1H0 V191MSY0.1HA V191MS30.1H0 V192MSY0.1HA V192MS30.1H0
V193MSY0.1HA V193MS30.1H0 V194MSY0.1HA V194MS30.1H0 V195MSY0.1HA V195MS30.1H0

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Wave Direction in Ma-Tsu Harbor of MSY0 at 2019

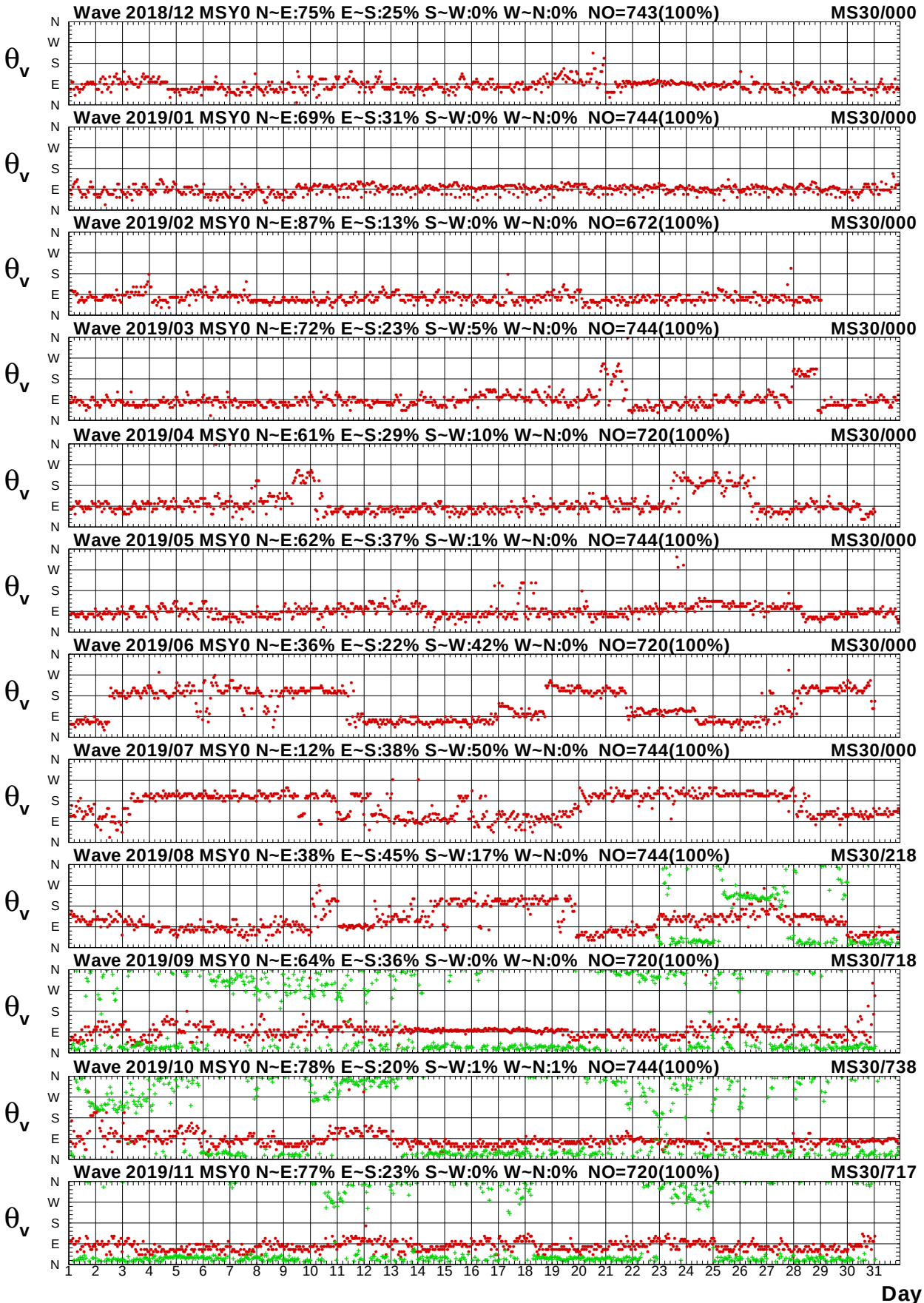


圖2.3.5c　2019年每月馬祖海域 Y 站與3站波向比較圖

V18CMSY0.1HA V18CMS30.1H0 V191MSY0.1HA V191MS30.1H0 V192MSY0.1HA V192MS30.1H0
V193MSY0.1HA V193MS30.1H0 V194MSY0.1HA V194MS30.1H0 V195MSY0.1HA V195MS30.1H0

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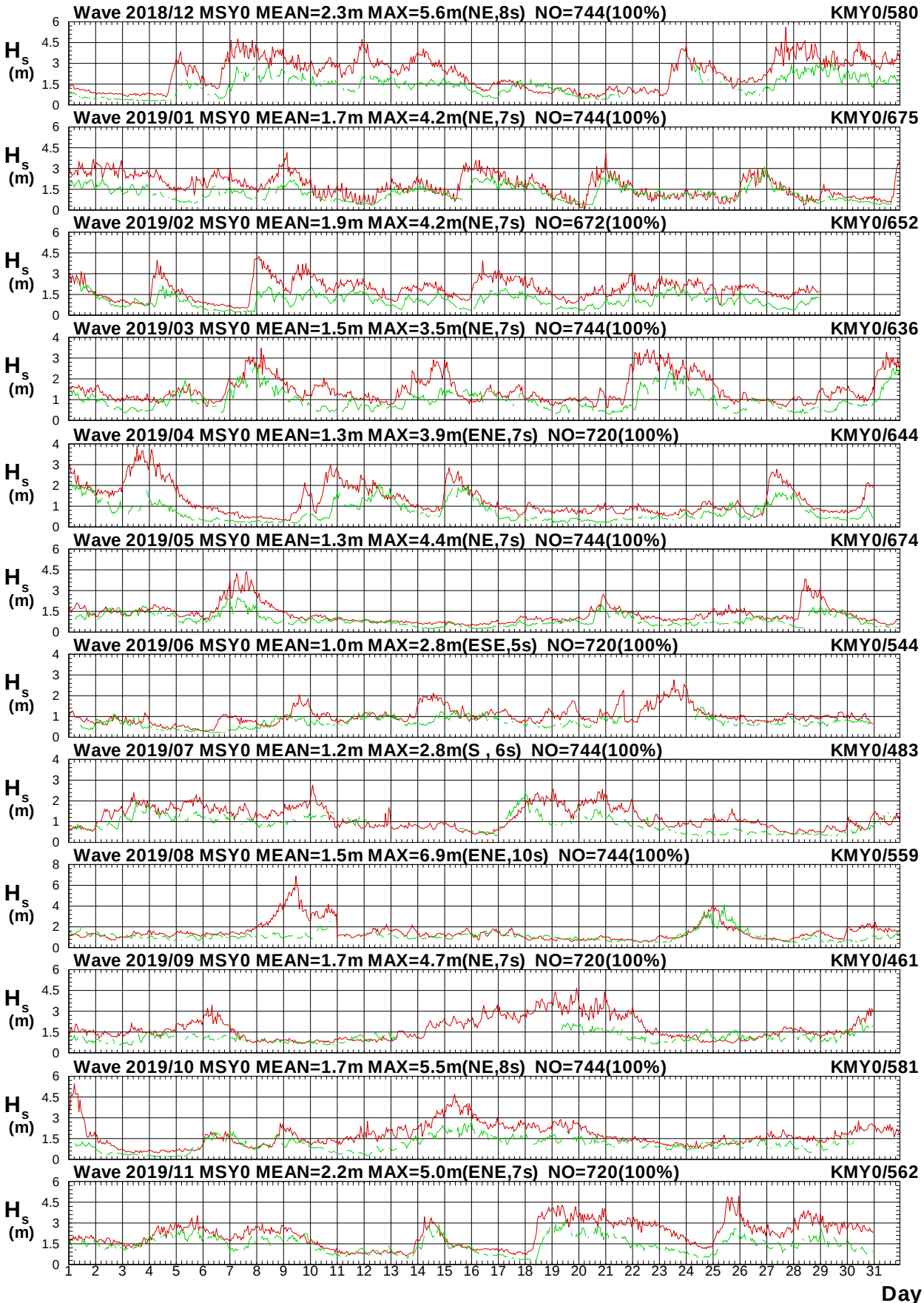


圖2.3.6a　2019年每月馬祖海域 Y 站與金門海域 Y 站波高圖

V18CMSY0.1HA V18CKMY0.1H0 V191MSY0.1HA V191KMY0.1H0 V192MSY0.1HA V192KMY0.1H0
V193MSY0.1HA V193KMY0.1H0 V194MSY0.1HA V194KMY0.1H0 V195MSY0.1HA V195KMY0.1H0

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Wave T_p in Ma-Tsu Harbor of MSY0 at 2019

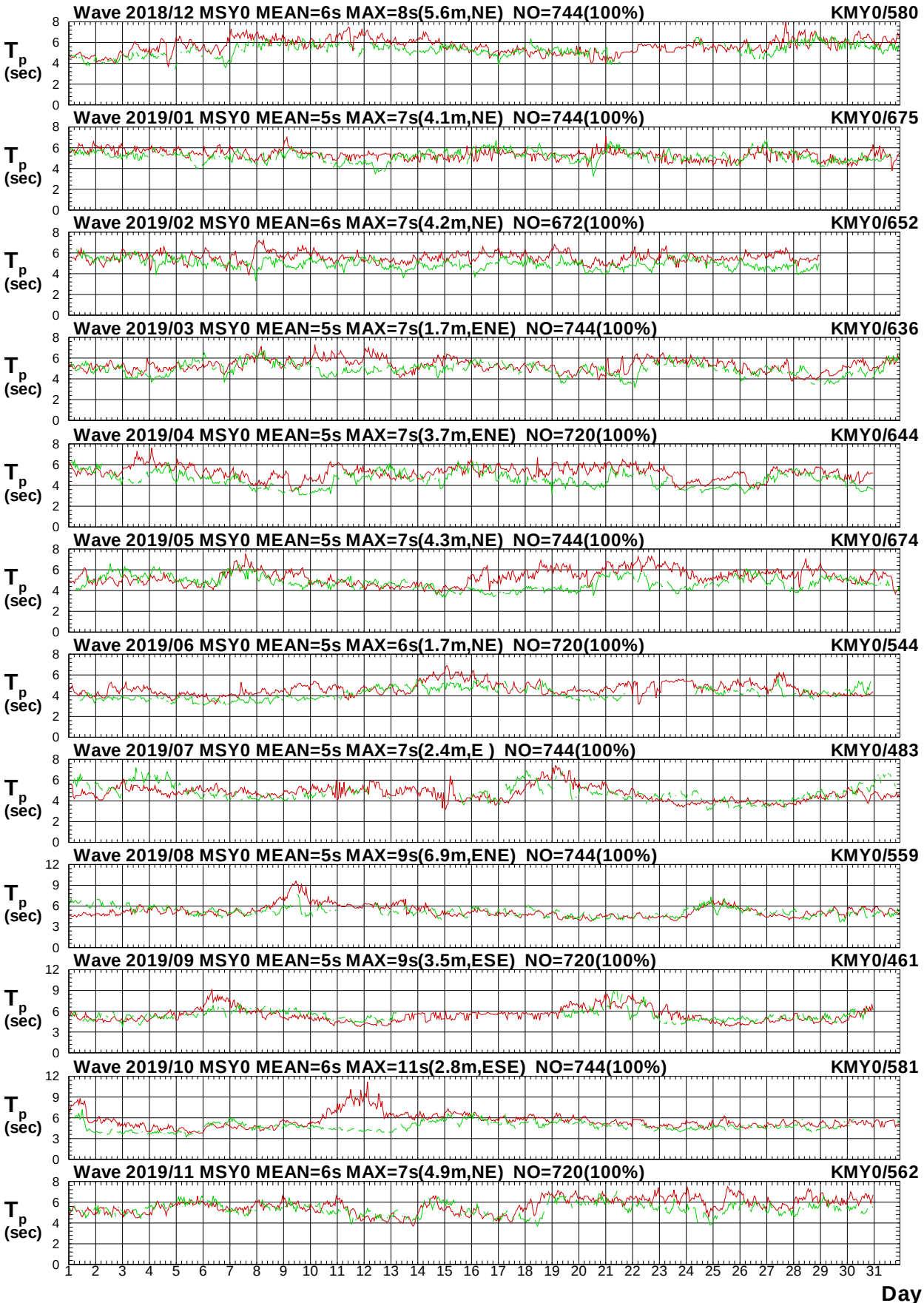


圖2.3.6b　2019年每月馬祖海域 Y 站與金門海域 Y 站週期圖

V18CMSY0.1HA V18CKMY0.1H0 V191MSY0.1HA V191KMY0.1H0 V192MSY0.1HA V192KMY0.1H0
V193MSY0.1HA V193KMY0.1H0 V194MSY0.1HA V194KMY0.1H0 V195MSY0.1HA V195KMY0.1H0

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Wave Direction in Ma-Tsu Harbor of MSY0 at 2019

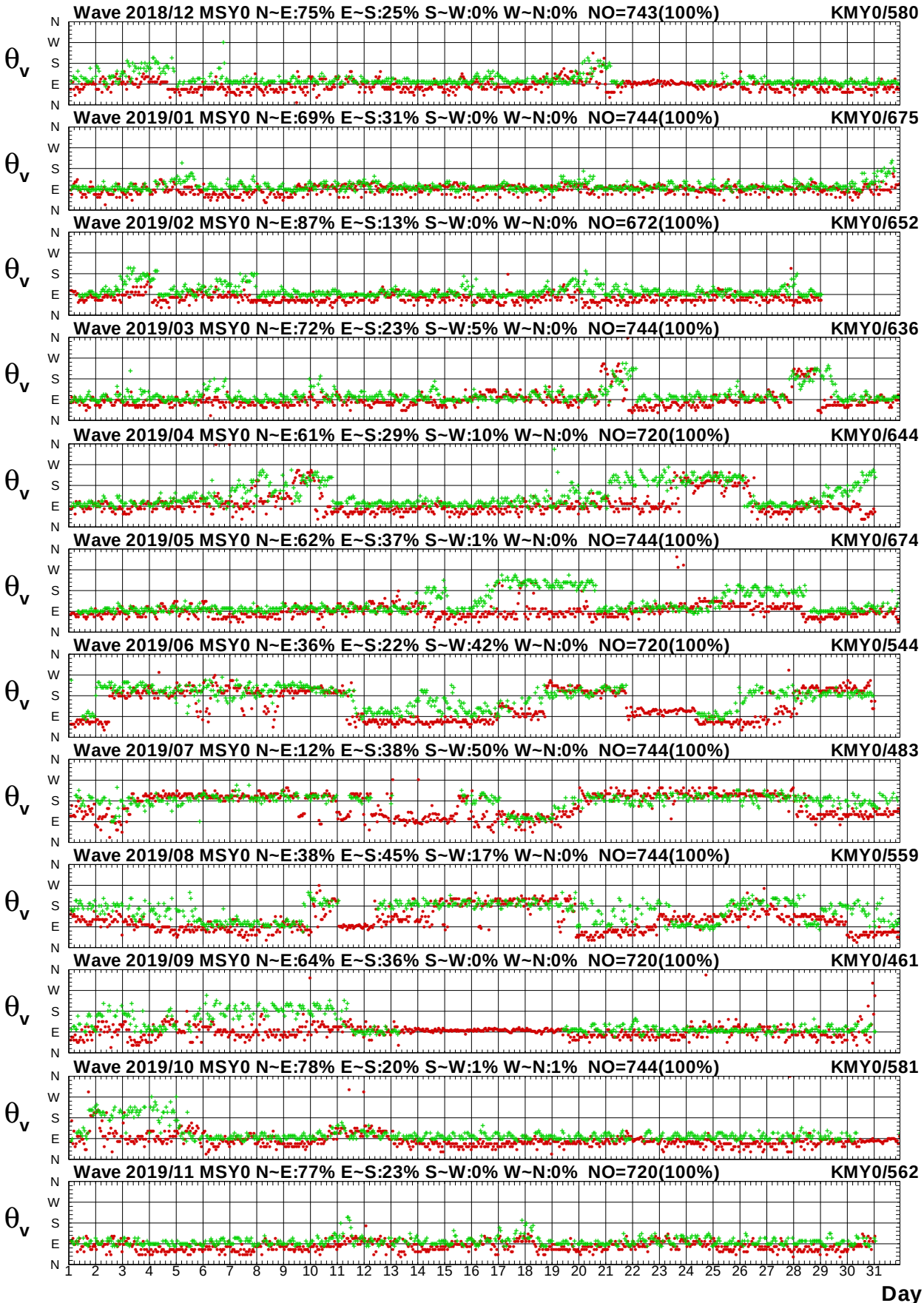


圖2.3.6c　2019年每月馬祖海域 Y 站與金門海域 Y 站波向圖

V18CMSY0.1HA V18CKMY0.1H0 V191MSY0.1HA V191KMY0.1H0 V192MSY0.1HA V192KMY0.1H0
V193MSY0.1HA V193KMY0.1H0 V194MSY0.1HA V194KMY0.1H0 V195MSY0.1HA V195KMY0.1H0

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Wave H_s in Ma-Tsu Harbor of MSY0 at 2019

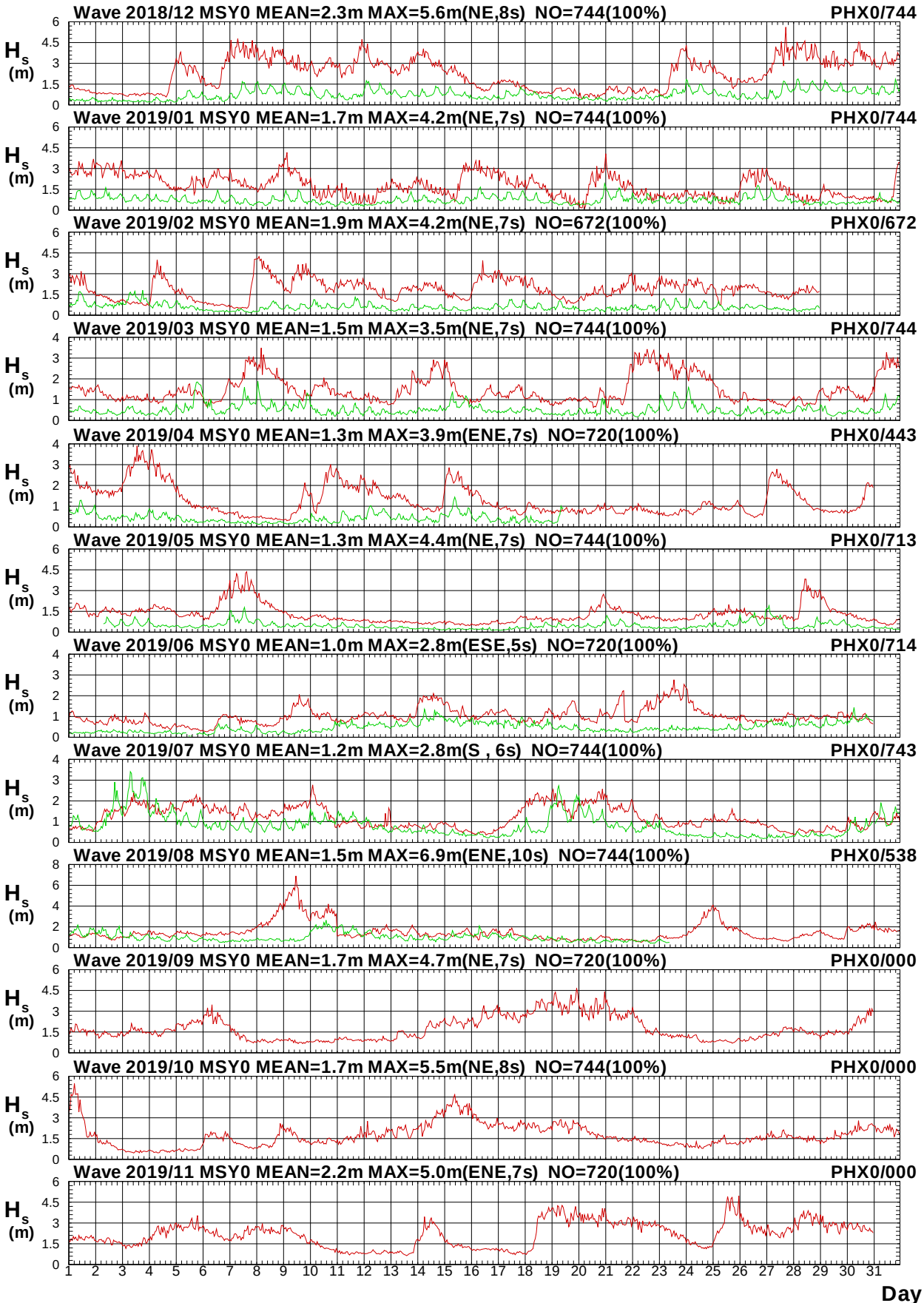


圖2.3.7a　2019年每月馬祖海域 Y 站與澎湖海域 X 站波高圖

V18CMSY0.1HA V18CPHX0.1H0 V191MSY0.1HA V191PHX0.1H0 V192MSY0.1HA V192PHX0.1H0
V193MSY0.1HA V193PHX0.1H0 V194MSY0.1HA V194PHX0.1H0 V195MSY0.1HA V195PHX0.1H0

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Wave T_p in Ma-Tsu Harbor of MSY0 at 2019

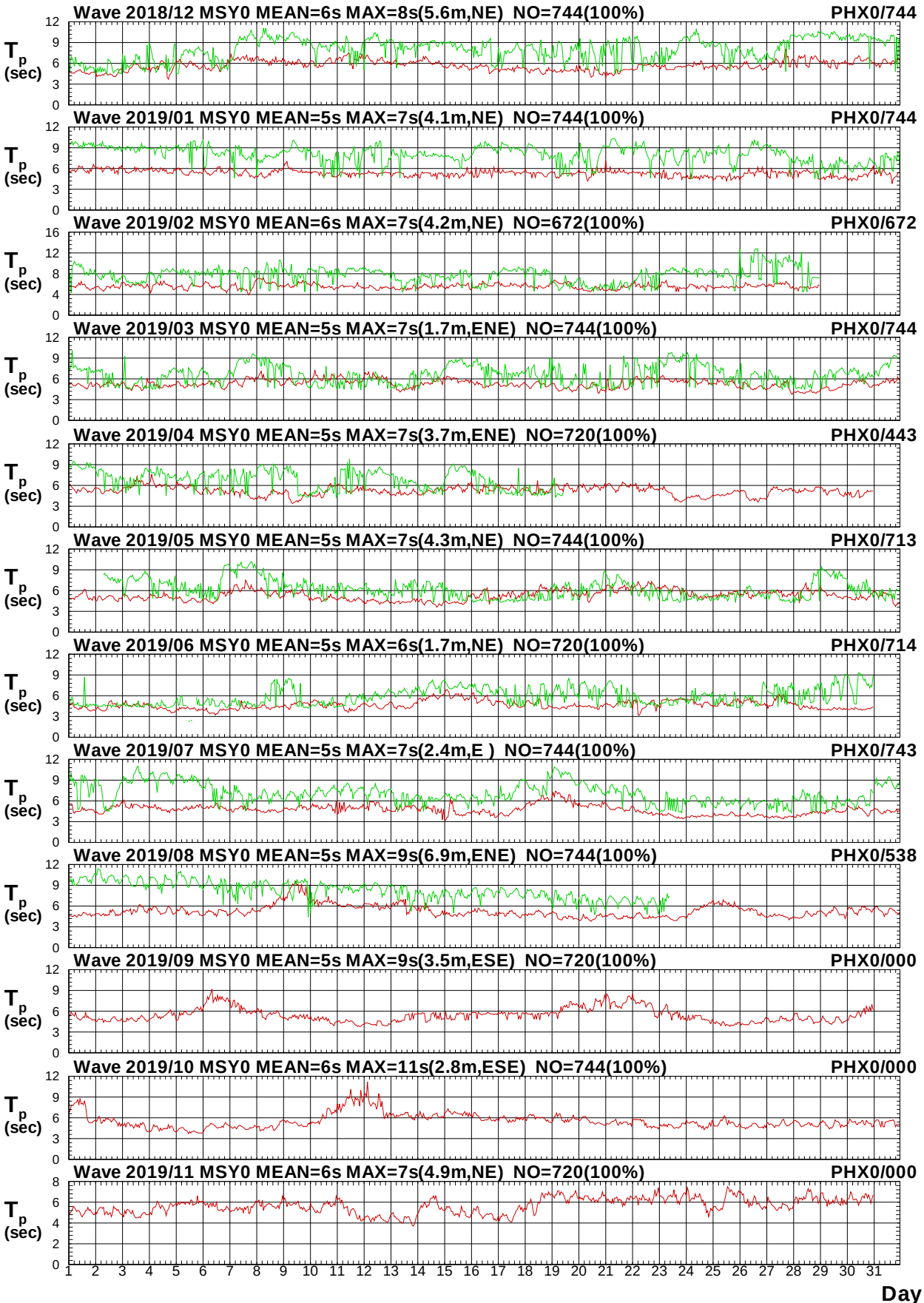


圖2.3.7b　2019年每月馬祖海域 Y 站與澎湖海域 X 站週期圖

V18CMSY0.1HA V18CPHX0.1H0 V191MSY0.1HA V191PHX0.1H0 V192MSY0.1HA V192PHX0.1H0
V193MSY0.1HA V193PHX0.1H0 V194MSY0.1HA V194PHX0.1H0 V195MSY0.1HA V195PHX0.1H0

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Wave Direction in Ma-Tsu Harbor of MSY0 at 2019

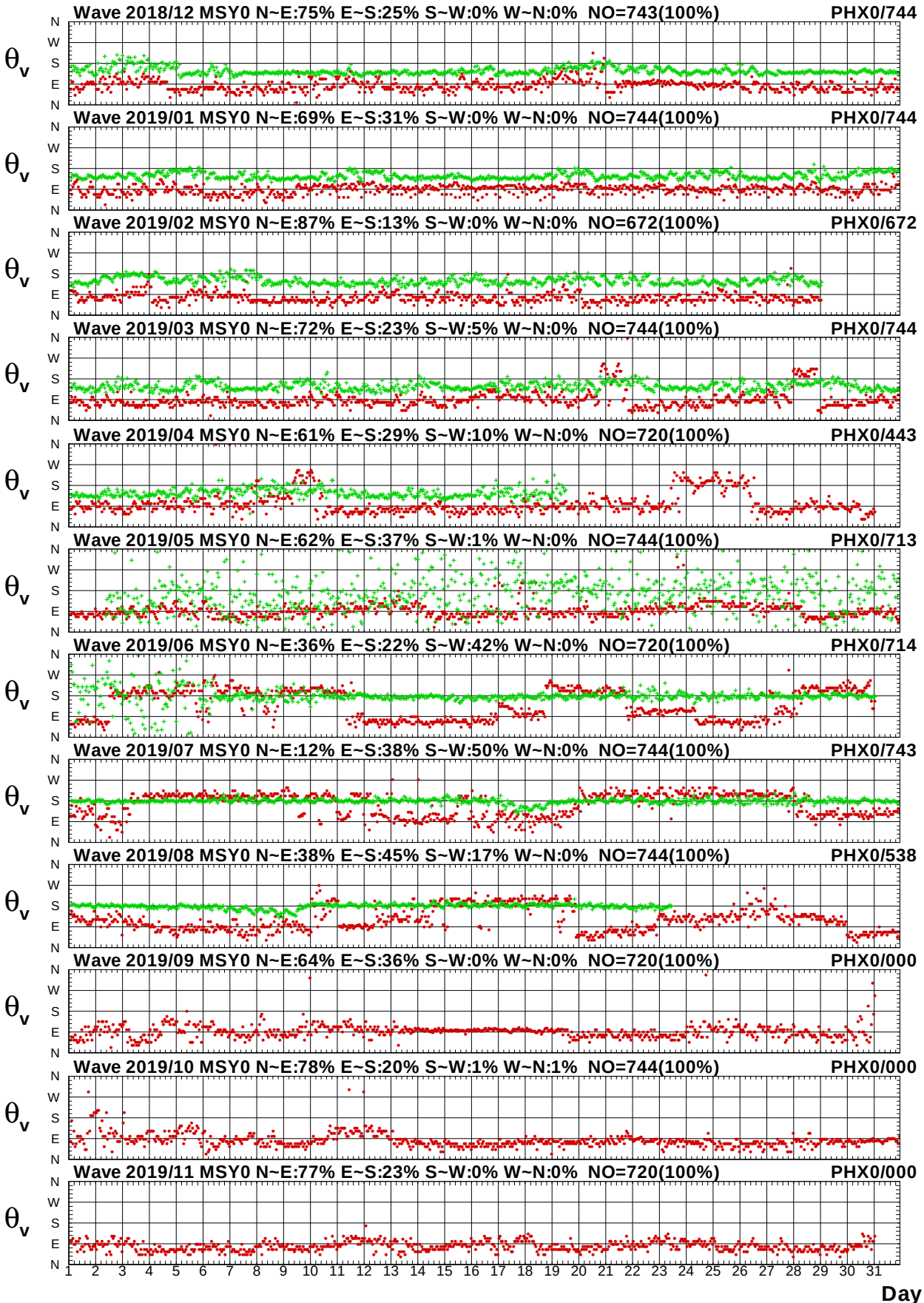


圖2.3.7c　2019年每月馬祖海域 Y 站與澎湖海域 X 站波向圖

V18CMSY0.1HA V18CPHX0.1H0 V191MSY0.1HA V191PHX0.1H0 V192MSY0.1HA V192PHX0.1H0
V193MSY0.1HA V193PHX0.1H0 V194MSY0.1HA V194PHX0.1H0 V195MSY0.1HA V195PHX0.1H0

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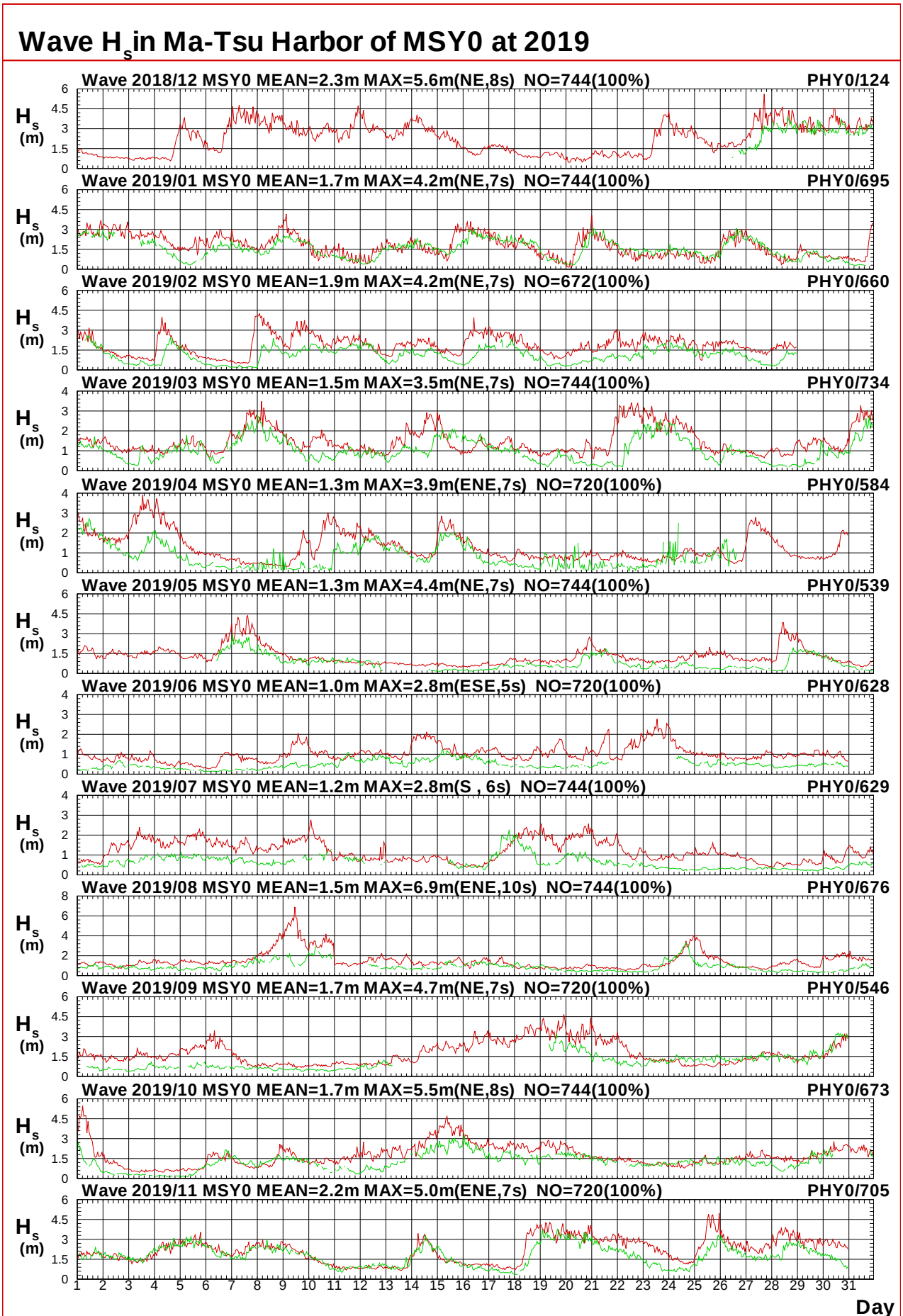


圖2.3.8a　2019年每月馬祖海域 Y 站與澎湖海域 Y 站波高圖

V18CMSY0.1HA V18CPHY0.1H0 V191MSY0.1HA V191PHY0.1H0 V192MSY0.1HA V192PHY0.1H0
V193MSY0.1HA V193PHY0.1H0 V194MSY0.1HA V194PHY0.1H0 V195MSY0.1HA V195PHY0.1H0

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Wave T_p in Ma-Tsu Harbor of MSY0 at 2019

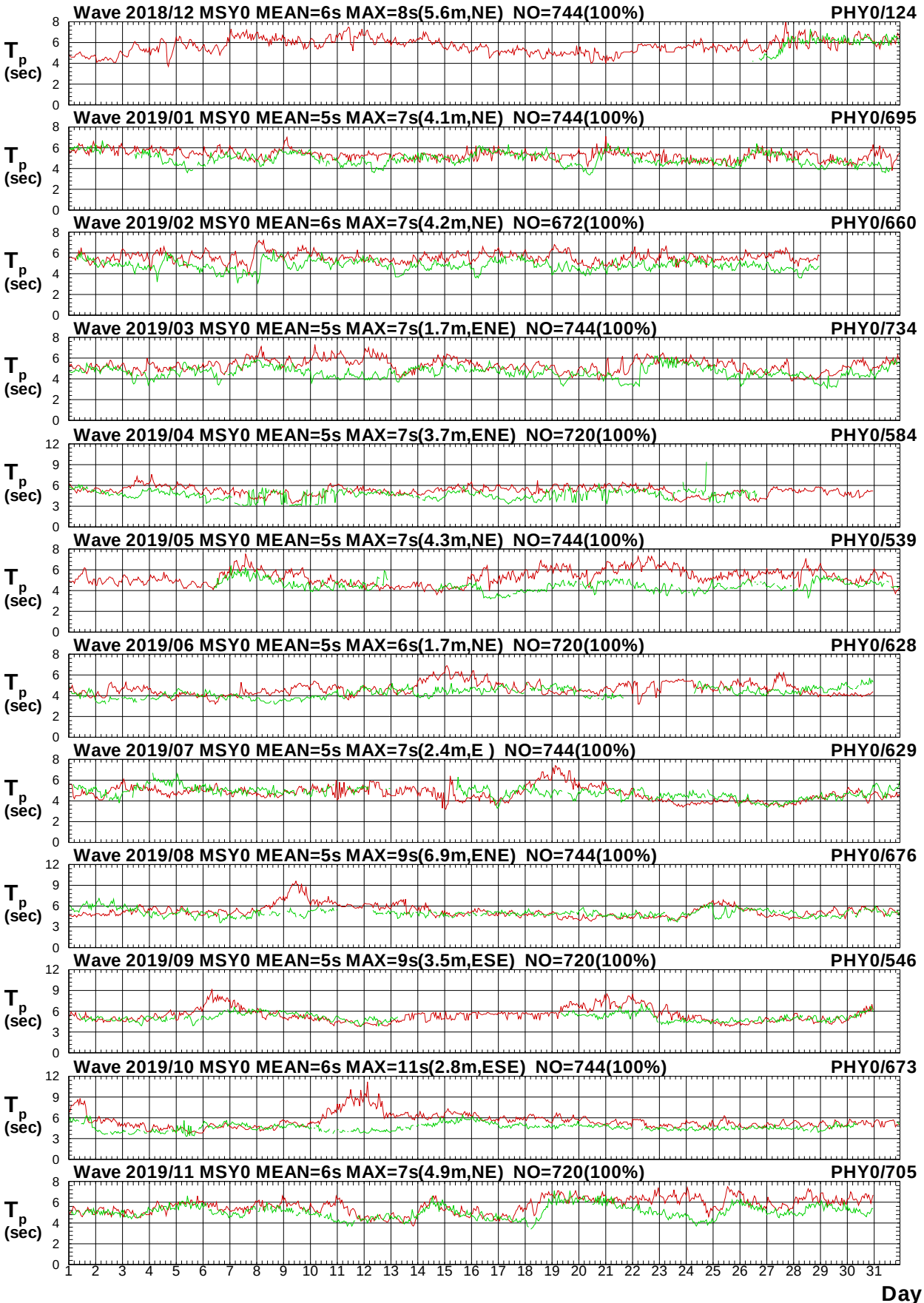


圖2.3.8b　2019年每月馬祖海域 Y 站與澎湖海域 Y 站週期圖

V18CMSY0.1HA V18CPHY0.1H0 V191MSY0.1HA V191PHY0.1H0 V192MSY0.1HA V192PHY0.1H0
V193MSY0.1HA V193PHY0.1H0 V194MSY0.1HA V194PHY0.1H0 V195MSY0.1HA V195PHY0.1H0

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Wave Direction in Ma-Tsu Harbor of MSY0 at 2019

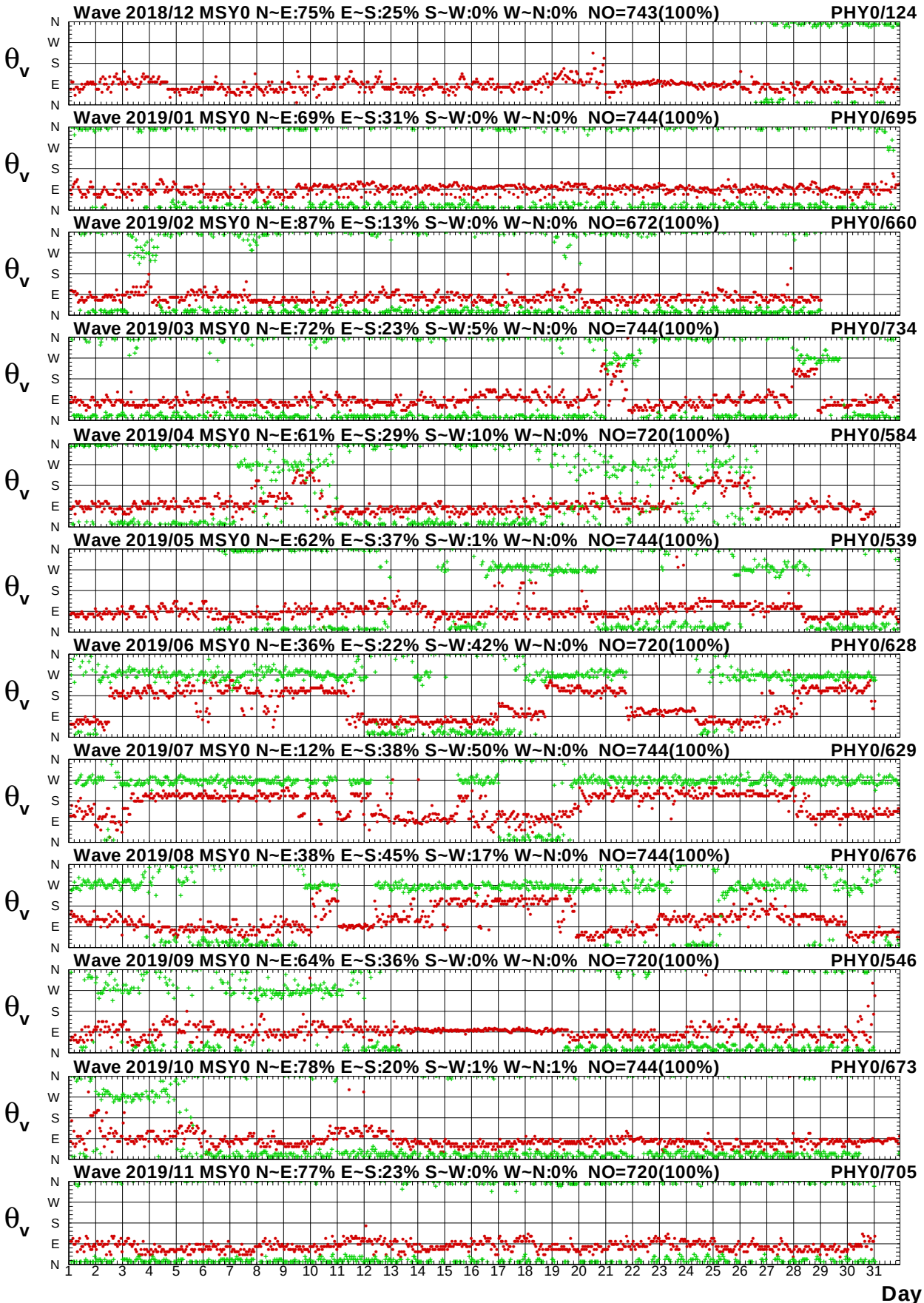


圖2.3.8c　2019年每月馬祖海域 Y 站與澎湖海域 Y 站波向圖

V18CMSY0.1HA V18CPHY0.1H0 V191MSY0.1HA V191PHY0.1H0 V192MSY0.1HA V192PHY0.1H0
V193MSY0.1HA V193PHY0.1H0 V194MSY0.1HA V194PHY0.1H0 V195MSY0.1HA V195PHY0.1H0

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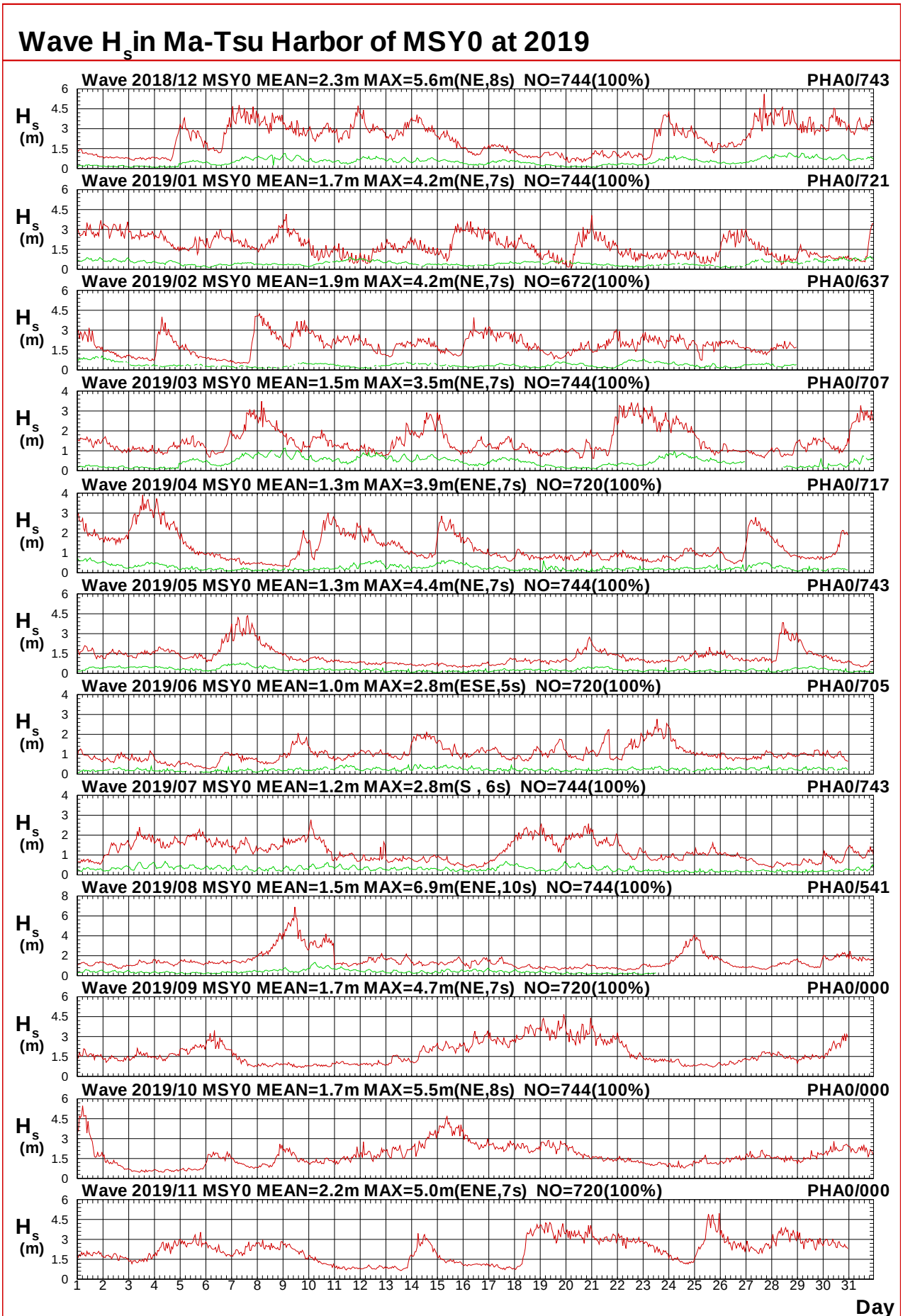


圖2.3.9a　2019年每月馬祖海域 Y 站與澎湖海域 A 站波高圖

V18CMSY0.1HA V18CPHA0.1H0 V191MSY0.1HA V191PHA0.1H0 V192MSY0.1HA V192PHA0.1H0
V193MSY0.1HA V193PHA0.1H0 V194MSY0.1HA V194PHA0.1H0 V195MSY0.1HA V195PHA0.1H0

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Wave T_p in Ma-Tsu Harbor of MSY0 at 2019

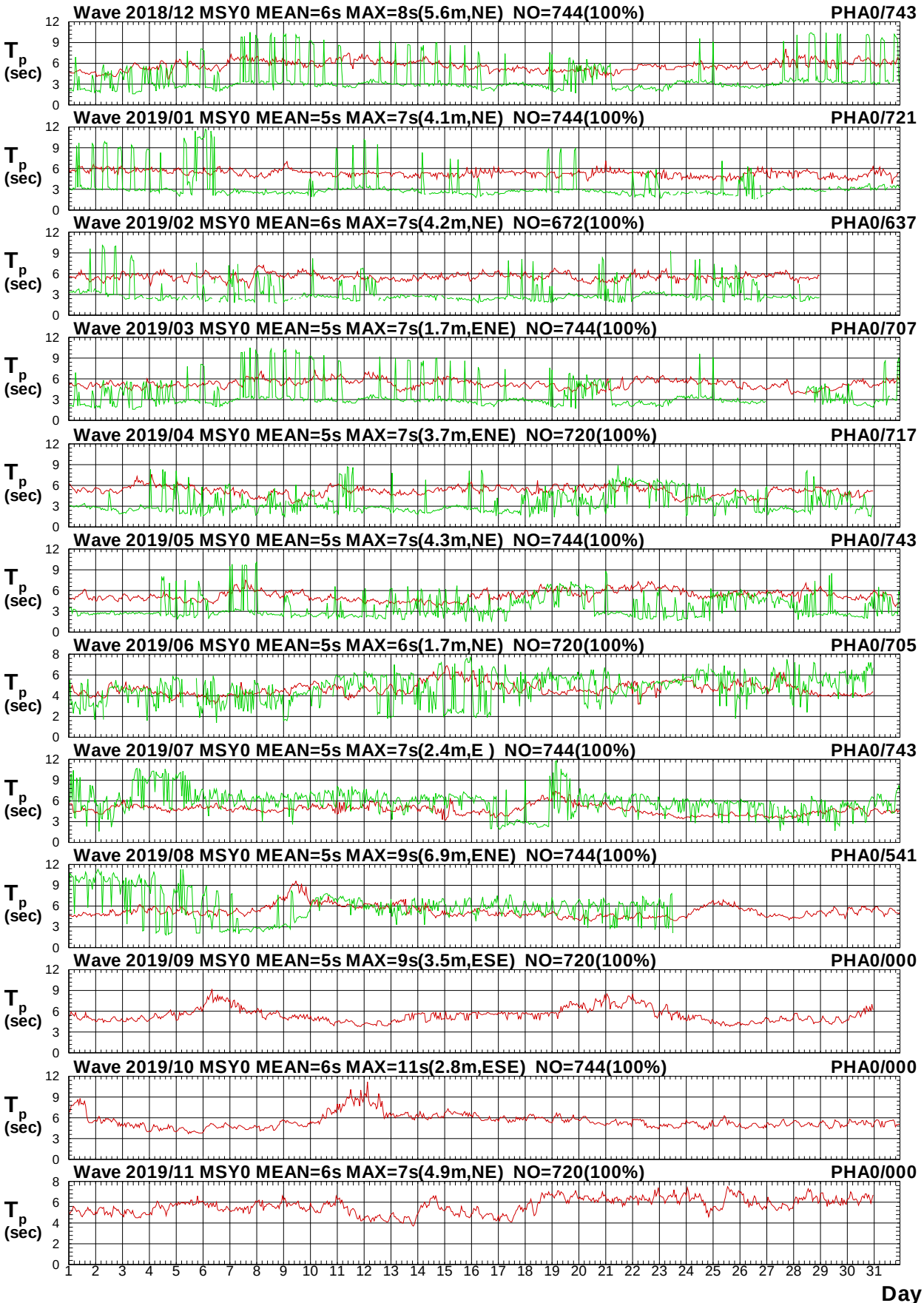


圖2.3.9b　2019年每月馬祖海域 Y 站與澎湖海域 A 站週期圖

V18CMSY0.1HA V18CPHA0.1H0 V191MSY0.1HA V191PHA0.1H0 V192MSY0.1HA V192PHA0.1H0
V193MSY0.1HA V193PHA0.1H0 V194MSY0.1HA V194PHA0.1H0 V195MSY0.1HA V195PHA0.1H0

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Wave Direction in Ma-Tsu Harbor of MSY0 at 2019

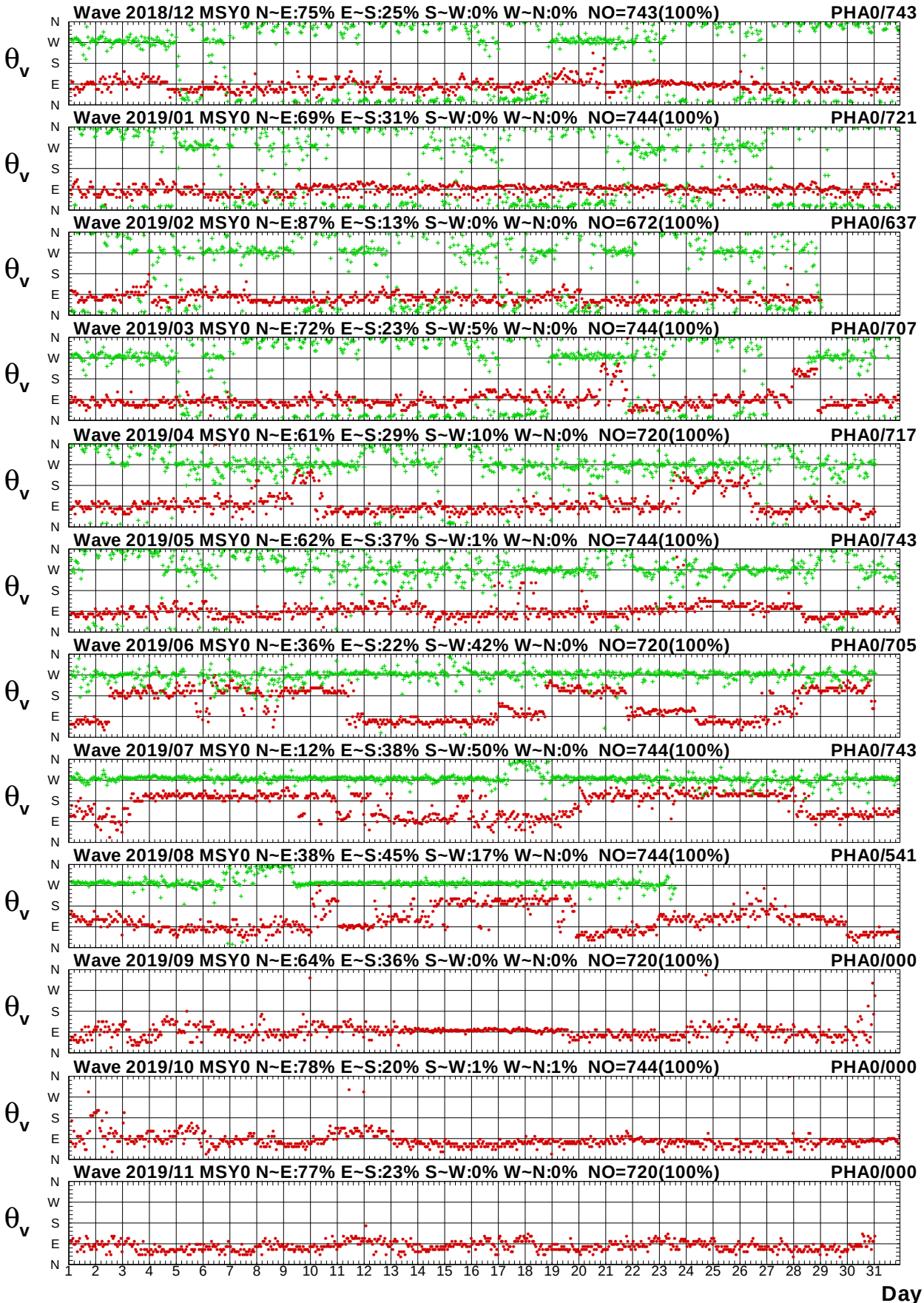


圖2.3.9c　2019年每月馬祖海域 Y 站與澎湖海域 A 站波向圖

V18CMSY0.1HA V18CPHA0.1H0 V191MSY0.1HA V191PHA0.1H0 V192MSY0.1HA V192PHA0.1H0
V193MSY0.1HA V193PHA0.1H0 V194MSY0.1HA V194PHA0.1H0 V195MSY0.1HA V195PHA0.1H0

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Wave H_s in Ma-Tsu Harbor of MSY0 at 2019

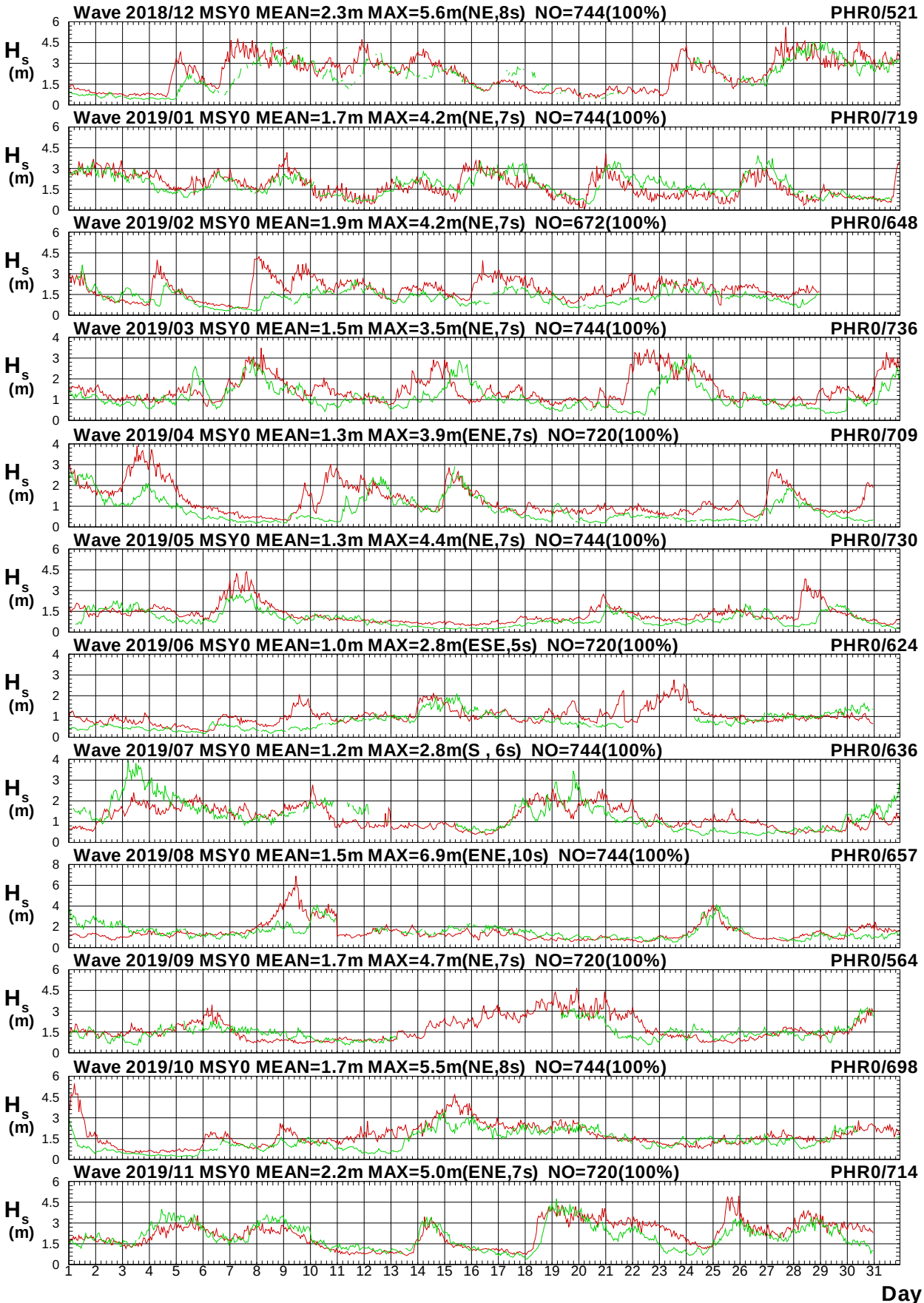


圖2.3.10a　2019年每月馬祖海域 Y 站與澎湖海域 R 站波高圖

V18CMSY0.1HA V18CPHR0.1H0 V191MSY0.1HA V191PHR0.1H0 V192MSY0.1HA V192PHR0.1H0
V193MSY0.1HA V193PHR0.1H0 V194MSY0.1HA V194PHR0.1H0 V195MSY0.1HA V195PHR0.1H0

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Wave T_p in Ma-Tsu Harbor of MSY0 at 2019

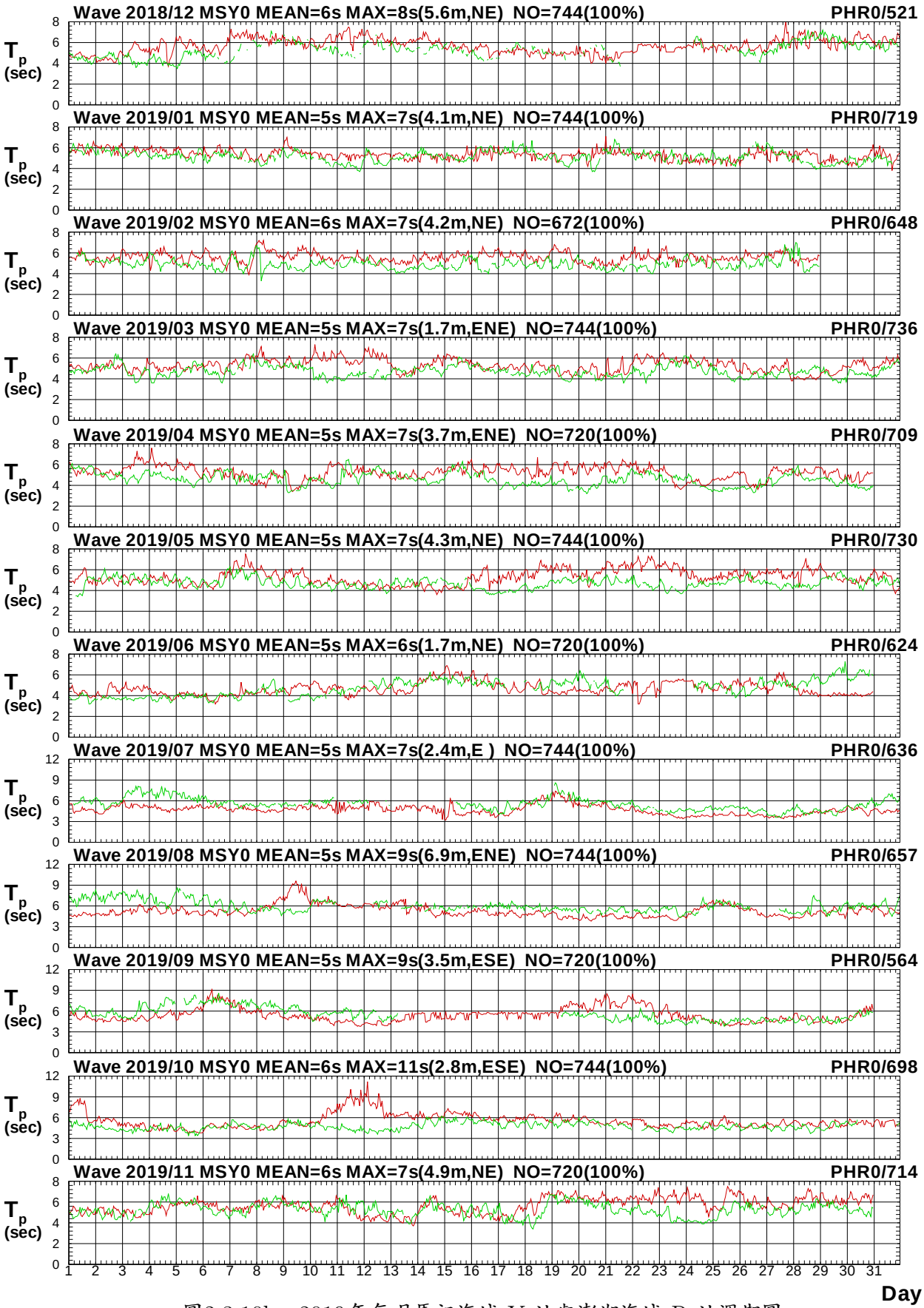


圖2.3.10b　2019年每月馬祖海域 Y 站與澎湖海域 R 站週期圖

V18CMSY0.1HA V18CPHR0.1H0 V191MSY0.1HA V191PHR0.1H0 V192MSY0.1HA V192PHR0.1H0
V193MSY0.1HA V193PHR0.1H0 V194MSY0.1HA V194PHR0.1H0 V195MSY0.1HA V195PHR0.1H0

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Wave Direction in Ma-Tsu Harbor of MSY0 at 2019

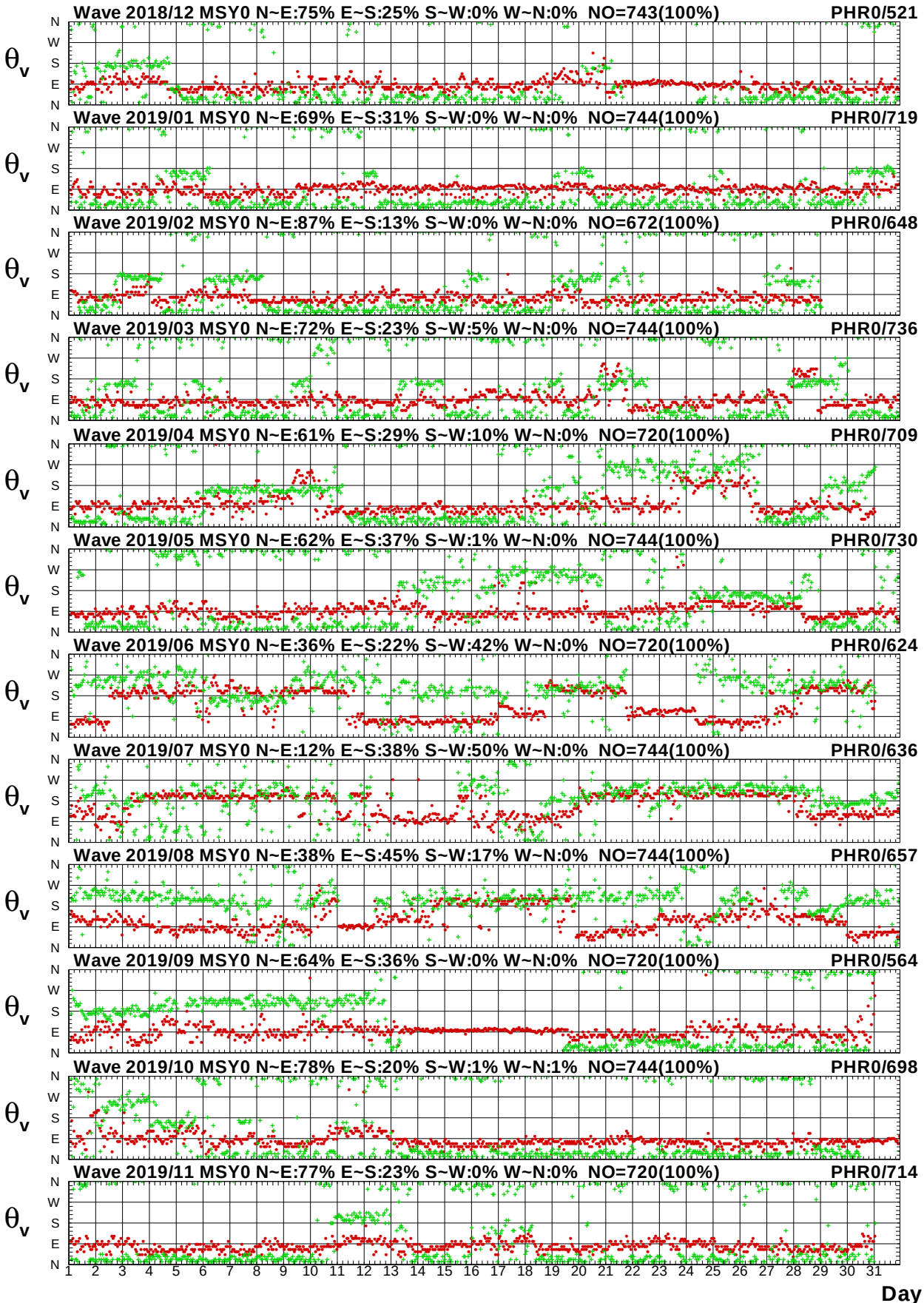


圖2.3.10c　2019年每月馬祖海域 Y 站與澎湖海域 R 站波向圖

V18CMSY0.1HA V18CPHR0.1H0 V191MSY0.1HA V191PHR0.1H0 V192MSY0.1HA V192PHR0.1H0
V193MSY0.1HA V193PHR0.1H0 V194MSY0.1HA V194PHR0.1H0 V195MSY0.1HA V195PHR0.1H0

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2.4　2019 年馬祖海域波浪主要測站 2(修補後)與其他測站(修補前)每月波浪歷線比較圖

Wave H_s in Ma-Tsu Harbor of MSX0 at 2019

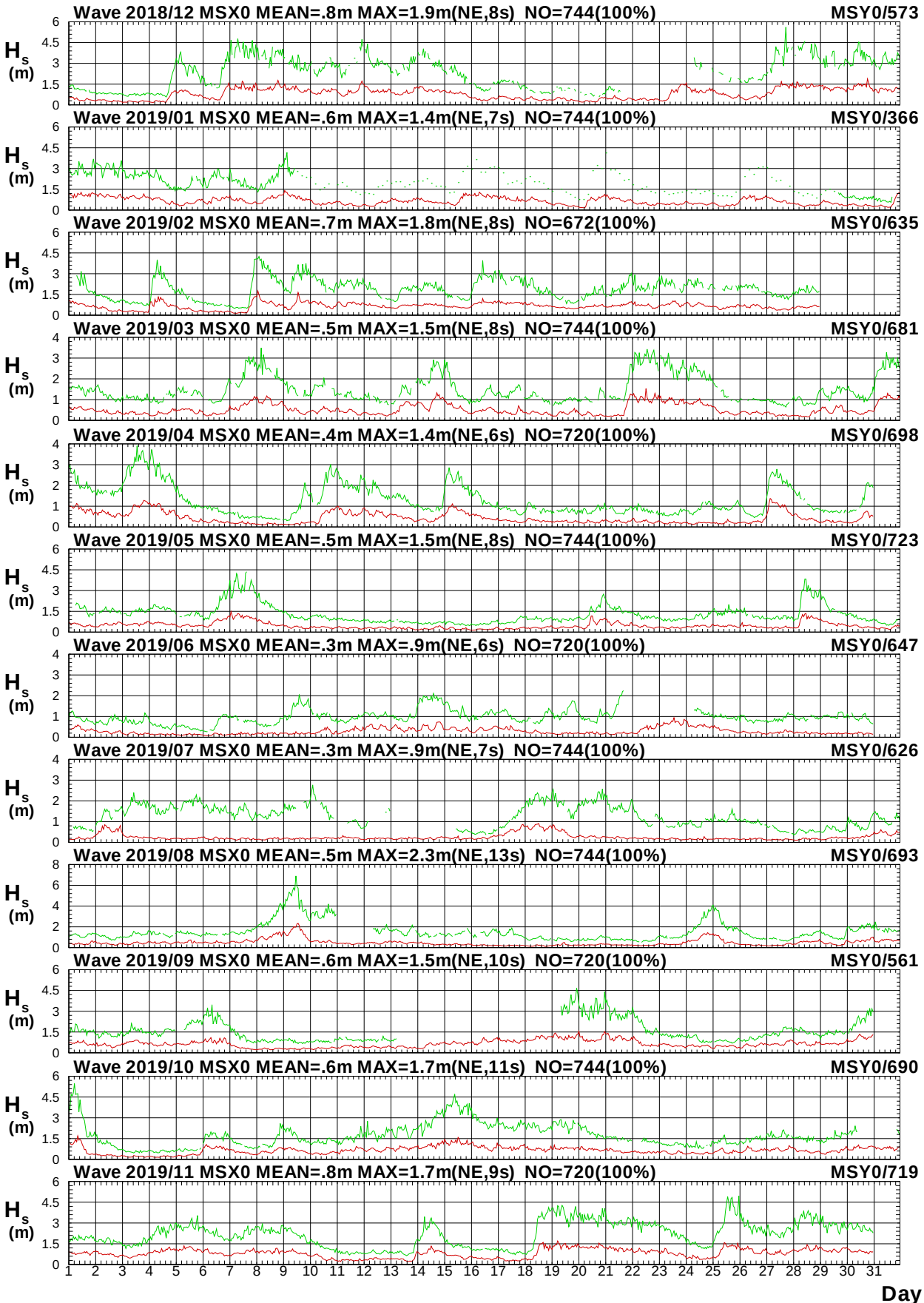


圖2.4.1a　2019年每月馬祖海域 X 站與 Y 站波高比較圖

V18CMSX0.1HA V18CMSY0.1H0 V191MSX0.1HA V191MSY0.1H0 V192MSX0.1HA V192MSY0.1H0
V193MSX0.1HA V193MSY0.1H0 V194MSX0.1HA V194MSY0.1H0 V195MSX0.1HA V195MSY0.1H0

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Wave T_p in Ma-Tsu Harbor of MSX0 at 2019

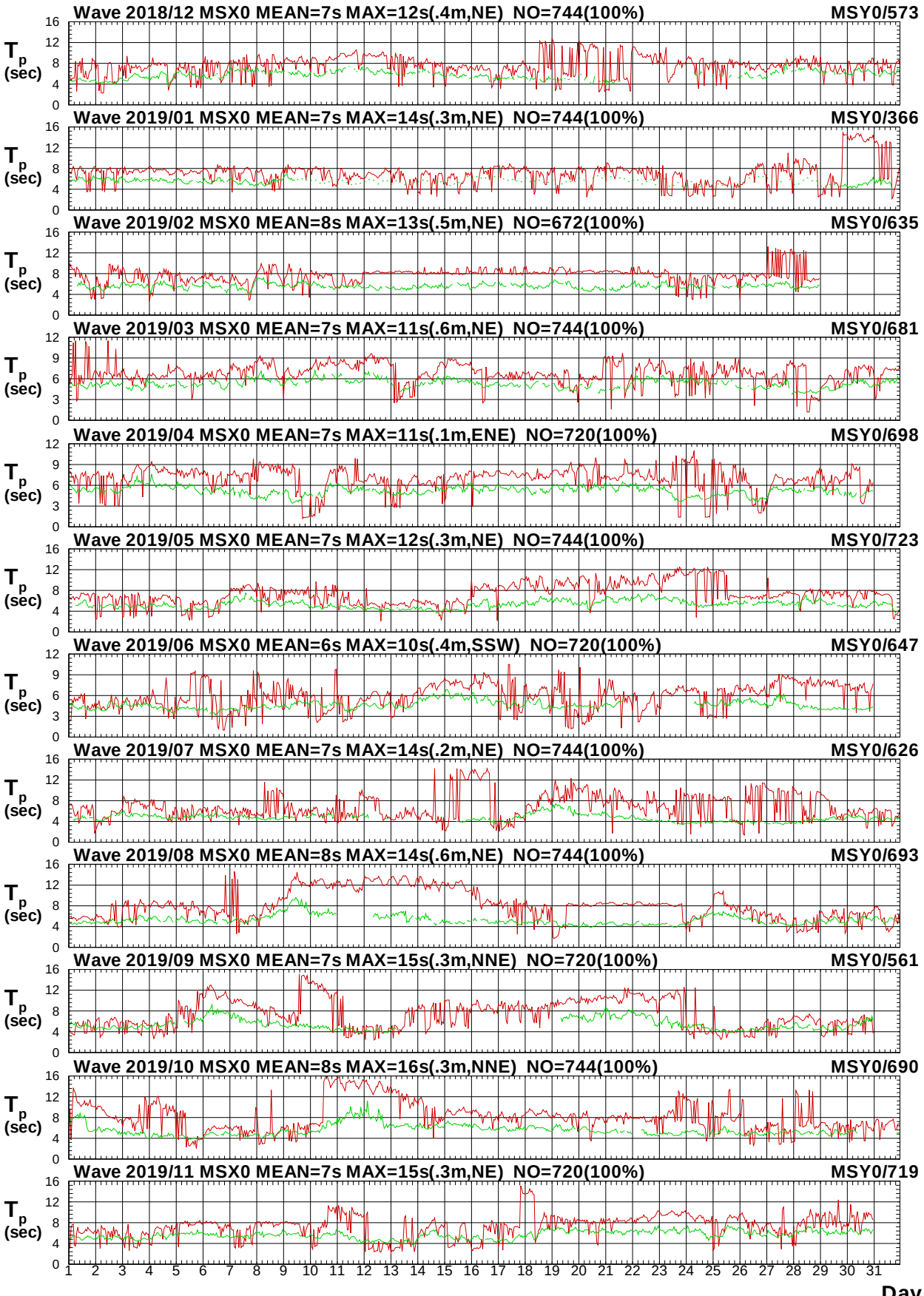


圖2.4.1b　2019年每月馬祖海域 X 站與 Y 站週期比較圖

V18CMSX0.1HA V18CMSY0.1H0 V191MSX0.1HA V191MSY0.1H0 V192MSX0.1HA V192MSY0.1H0
V193MSX0.1HA V193MSY0.1H0 V194MSX0.1HA V194MSY0.1H0 V195MSX0.1HA V195MSY0.1H0

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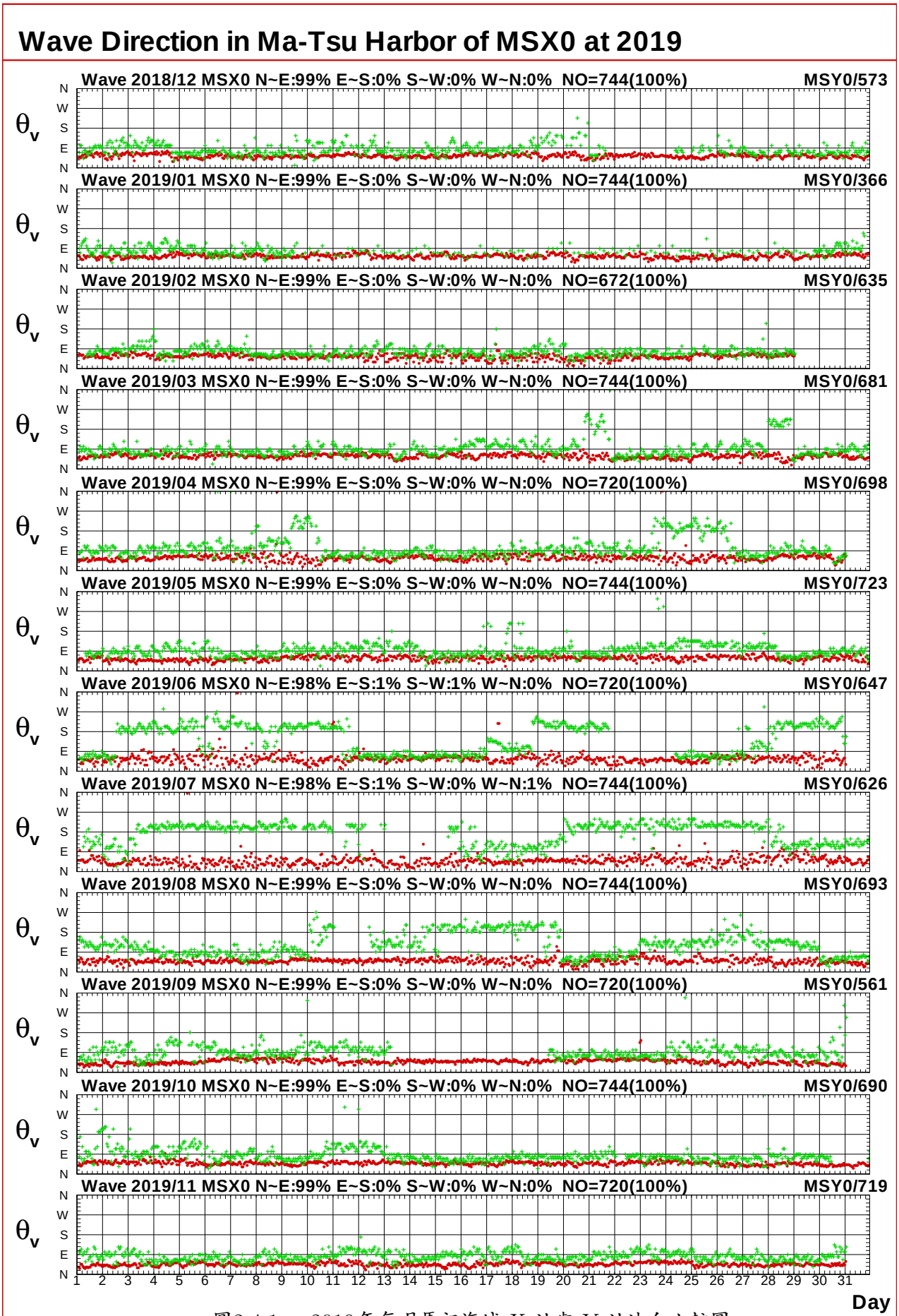


圖2.4.1c　2019年每月馬祖海域 X 站與 Y 站波向比較圖

V18CMSX0.1HA V18CMSY0.1H0 V191MSX0.1HA V191MSY0.1H0 V192MSX0.1HA V192MSY0.1H0
V193MSX0.1HA V193MSY0.1H0 V194MSX0.1HA V194MSY0.1H0 V195MSX0.1HA V195MSY0.1H0

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Wave H_s in Ma-Tsu Harbor of MSX0 at 2019

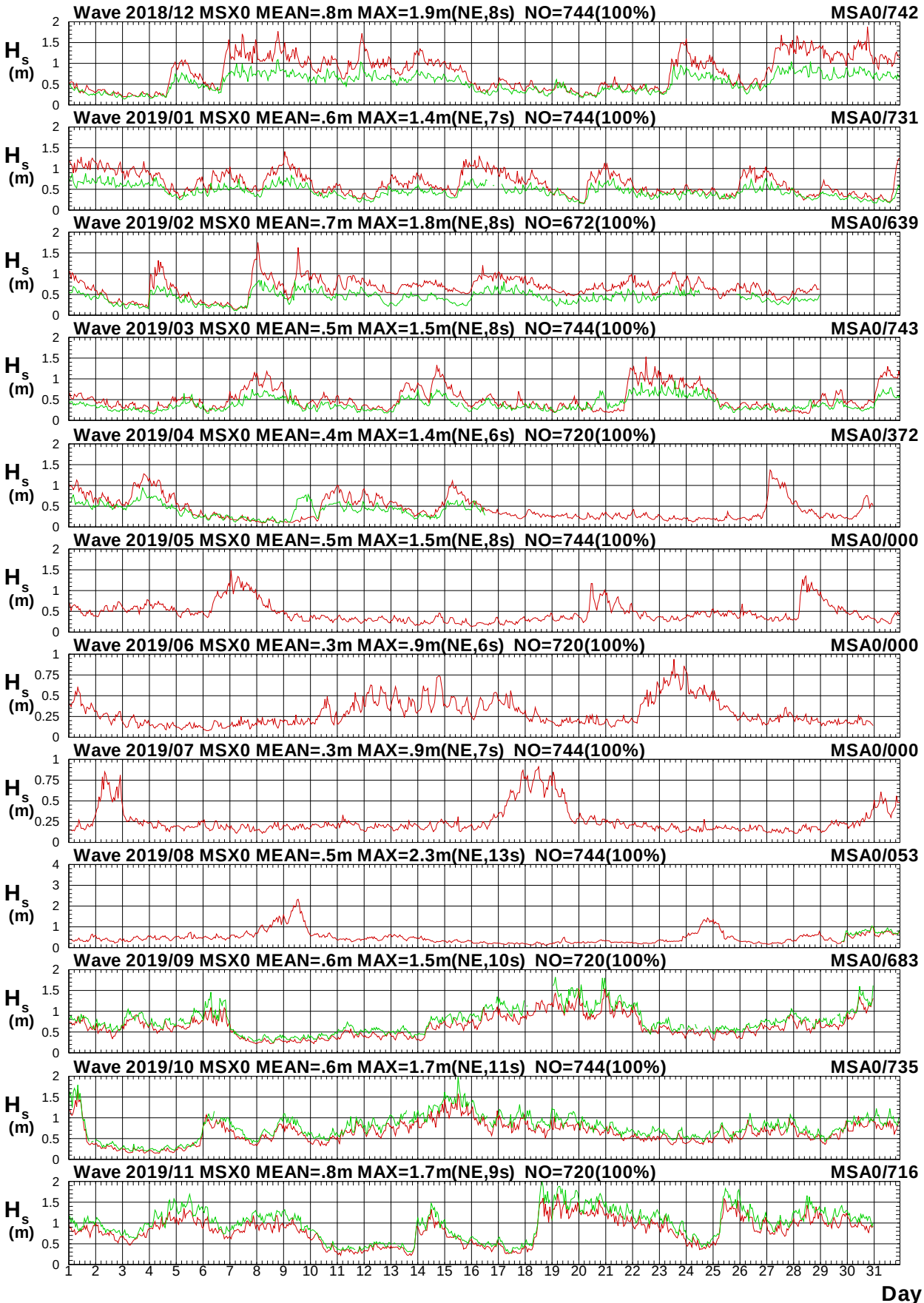


圖2.4.2a　2019年每月馬祖海域 X 站與 A 站波高比較圖

V18CMSX0.1HA V18CMSA0.1H0 V191MSX0.1HA V191MSA0.1H0 V192MSX0.1HA V192MSA0.1H0
V193MSX0.1HA V193MSA0.1H0 V194MSX0.1HA V194MSA0.1H0 V195MSX0.1HA V195MSA0.1H0

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Wave T_p in Ma-Tsu Harbor of MSX0 at 2019

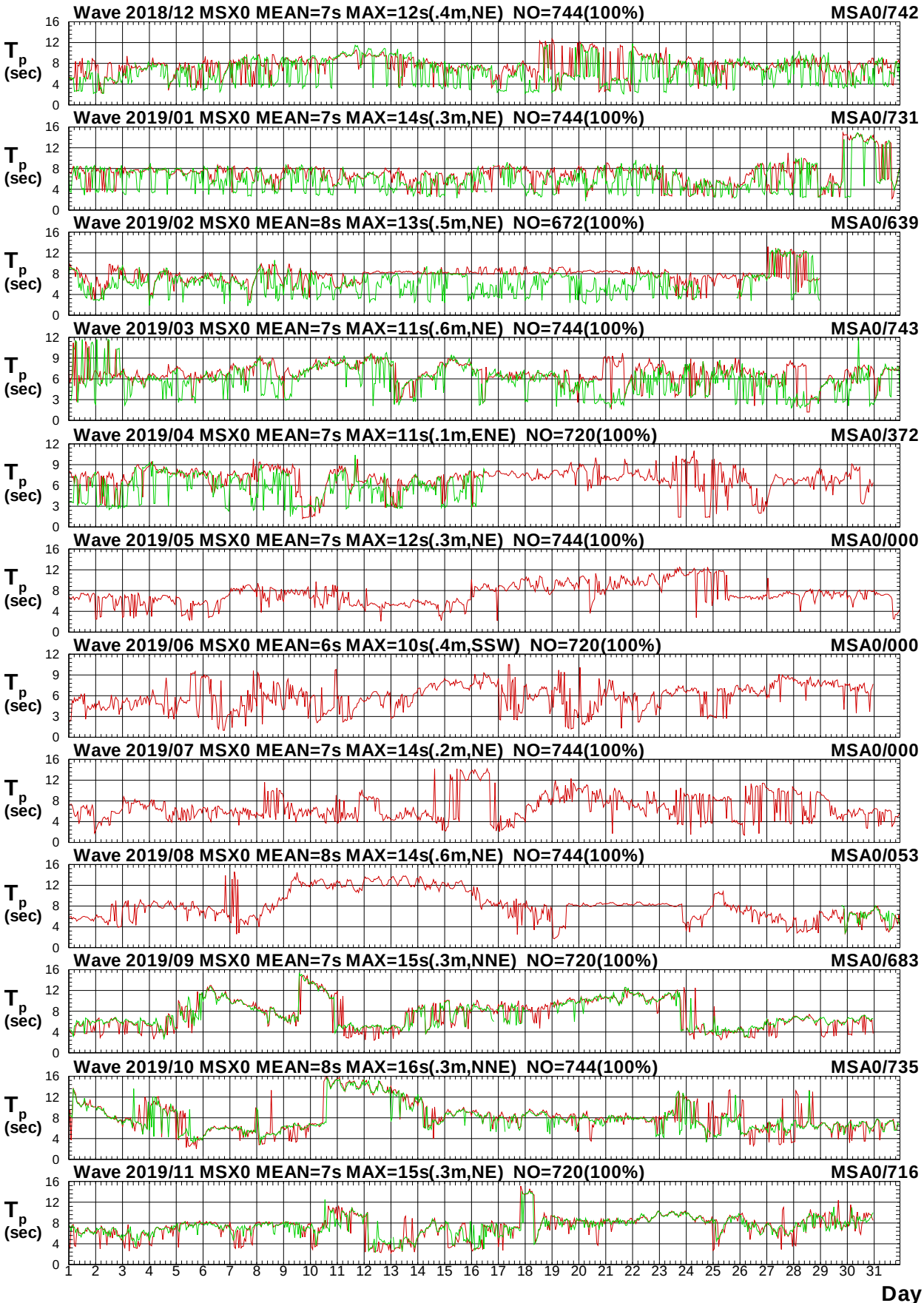


圖2.4.2b　2019年每月馬祖海域 X 站與 A 站週期比較圖

V18CMSX0.1HA V18CMSA0.1H0 V191MSX0.1HA V191MSA0.1H0 V192MSX0.1HA V192MSA0.1H0
V193MSX0.1HA V193MSA0.1H0 V194MSX0.1HA V194MSA0.1H0 V195MSX0.1HA V195MSA0.1H0

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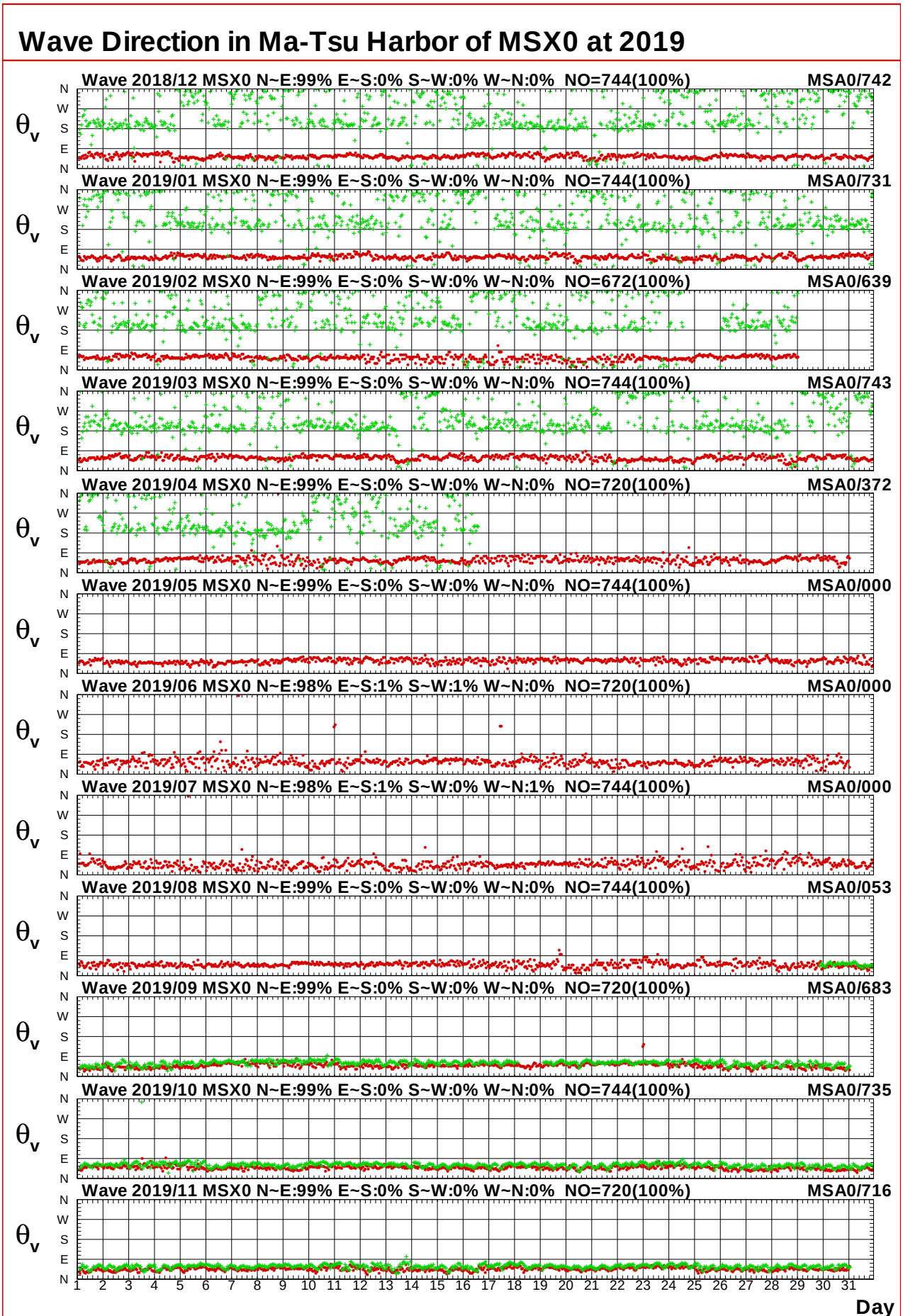


圖2.4.2c　2019年每月馬祖海域 X 站與 A 站波向比較圖

V18CMSX0.1HA V18CMSA0.1H0 V191MSX0.1HA V191MSA0.1H0 V192MSX0.1HA V192MSA0.1H0
V193MSX0.1HA V193MSA0.1H0 V194MSX0.1HA V194MSA0.1H0 V195MSX0.1HA V195MSA0.1H0

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Wave H_s in Ma-Tsu Harbor of MSX0 at 2019

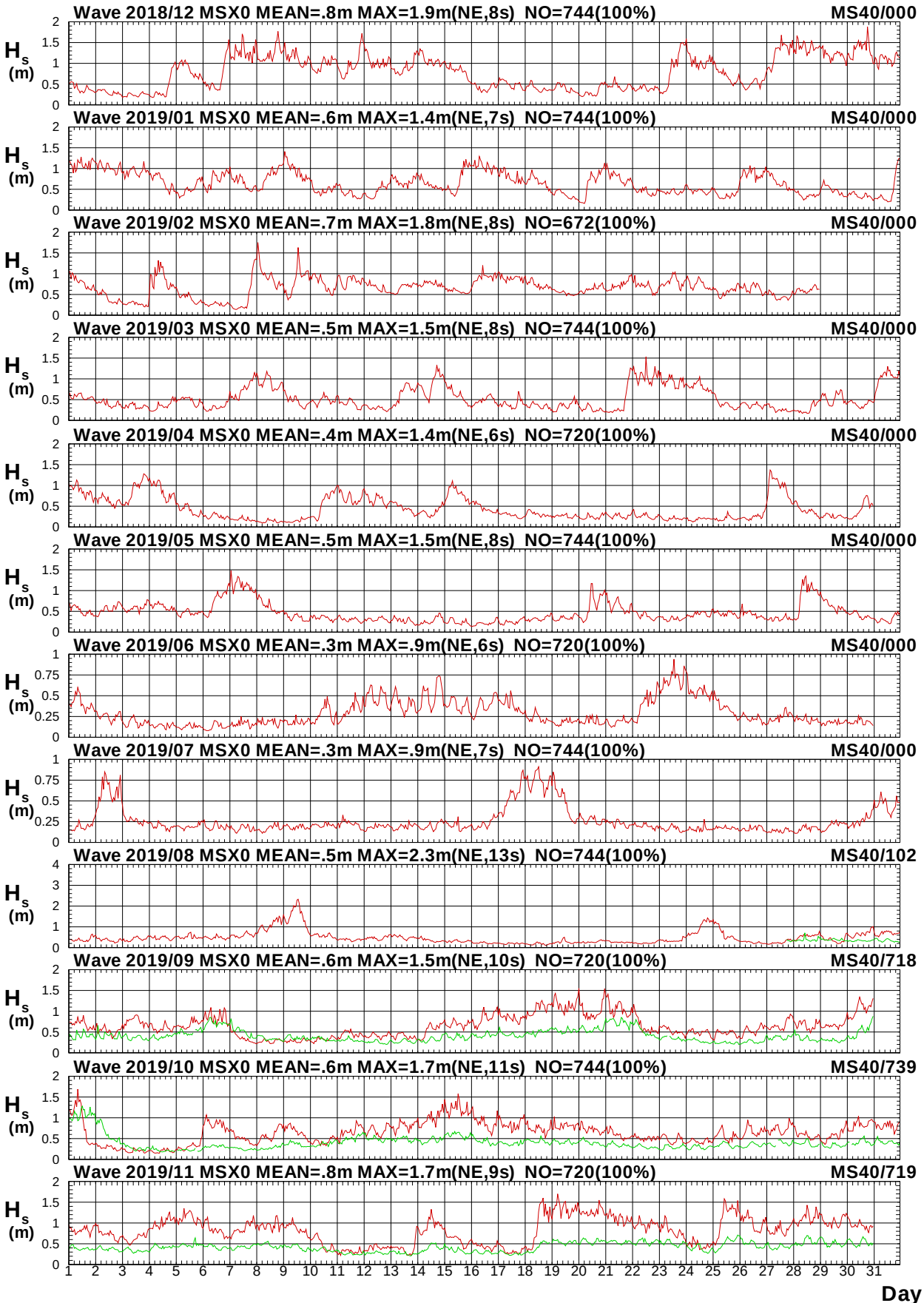


圖2.4.3a　2019年每月馬祖海域 X 站與4站波高比較圖

V18CMSX0.1HA V18CMS40.1H0 V191MSX0.1HA V191MS40.1H0 V192MSX0.1HA V192MS40.1H0
V193MSX0.1HA V193MS40.1H0 V194MSX0.1HA V194MS40.1H0 V195MSX0.1HA V195MS40.1H0

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Wave T_p in Ma-Tsu Harbor of MSX0 at 2019

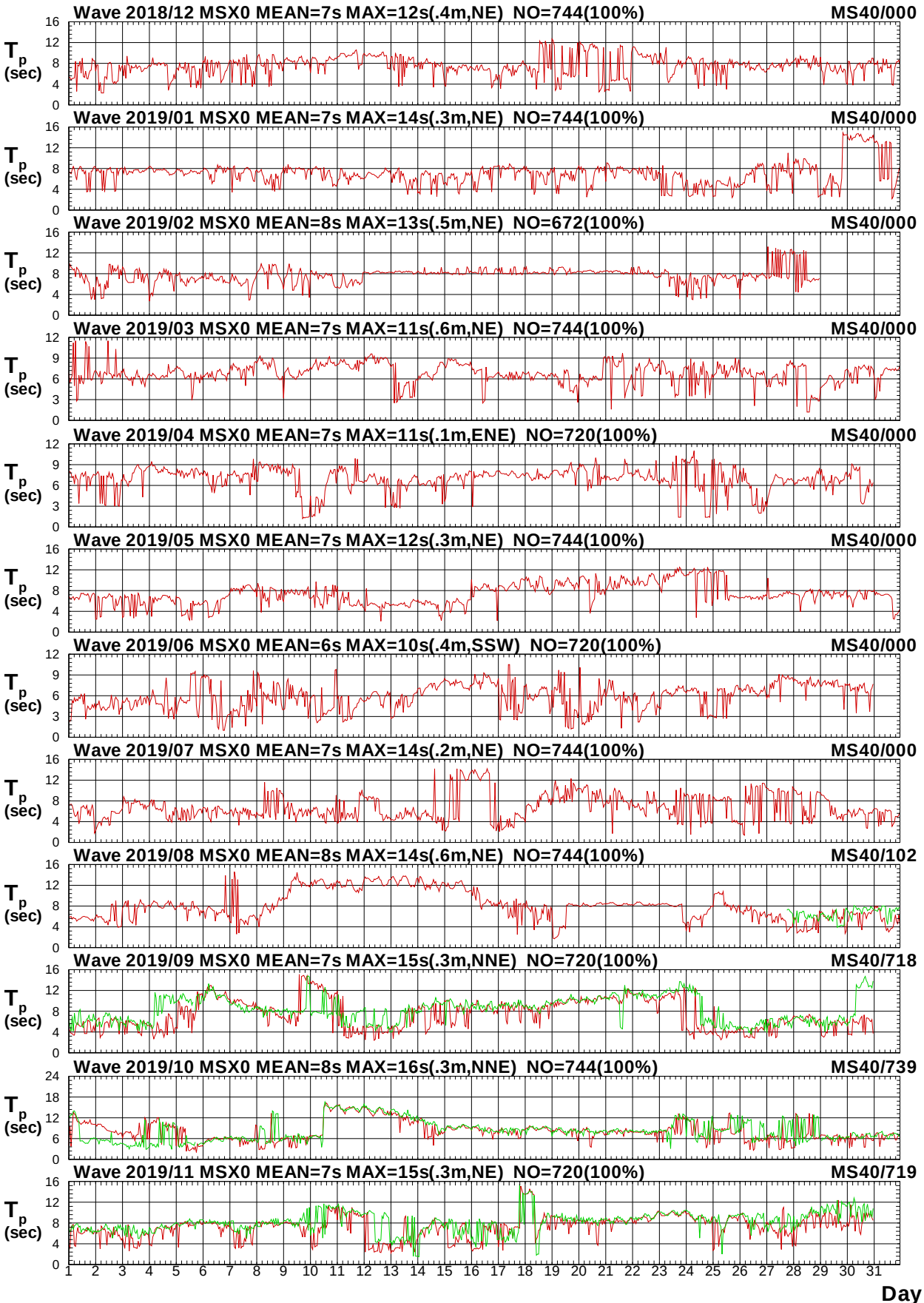


圖2.4.3b　2019年每月馬祖海域 X 站與4站週期比較圖

V18CMSX0.1HA V18CMS40.1H0 V191MSX0.1HA V191MS40.1H0 V192MSX0.1HA V192MS40.1H0
V193MSX0.1HA V193MS40.1H0 V194MSX0.1HA V194MS40.1H0 V195MSX0.1HA V195MS40.1H0

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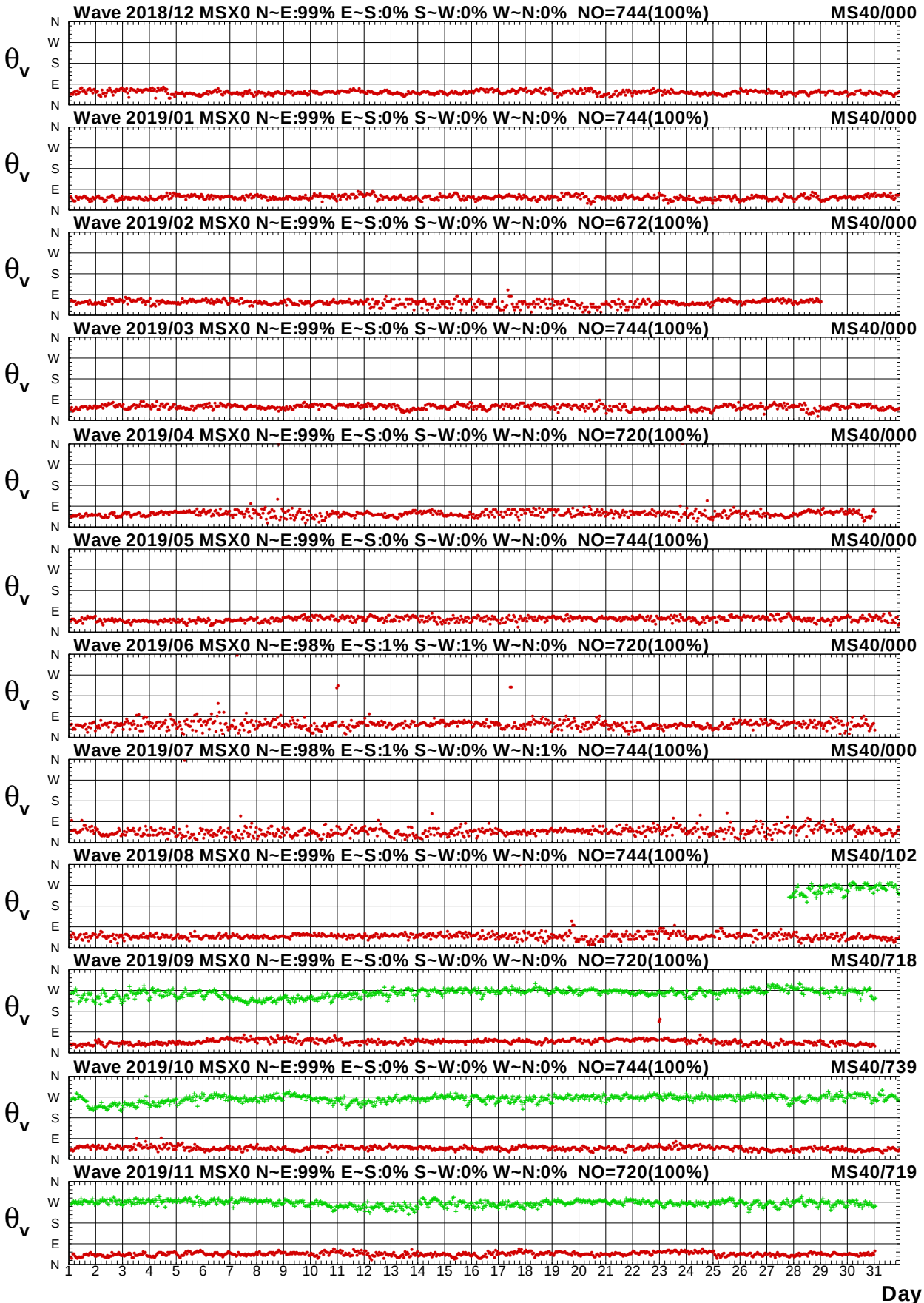


圖2.4.3c　2019年每月馬祖海域 X 站與4站波向比較圖

V18CMSX0.1HA V18CMS40.1H0 V191MSX0.1HA V191MS40.1H0 V192MSX0.1HA V192MS40.1H0
V193MSX0.1HA V193MS40.1H0 V194MSX0.1HA V194MS40.1H0 V195MSX0.1HA V195MS40.1H0

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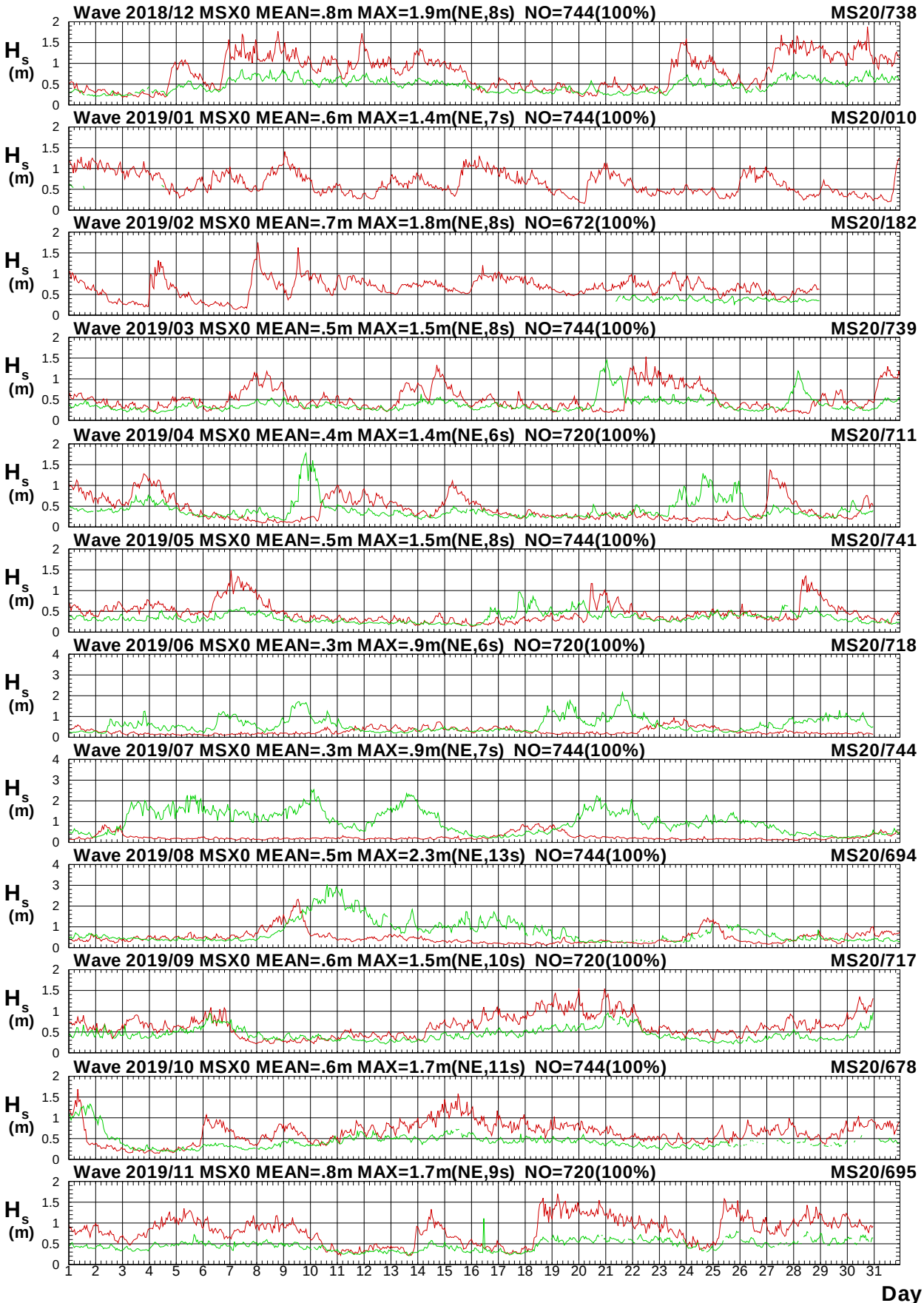


圖2.4.4a　2019年每月馬祖海域 X 站與2站波高比較圖

V18CMSX0.1HA V18CMS20.1H0 V191MSX0.1HA V191MS20.1H0 V192MSX0.1HA V192MS20.1H0
V193MSX0.1HA V193MS20.1H0 V194MSX0.1HA V194MS20.1H0 V195MSX0.1HA V195MS20.1H0

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Wave T_p in Ma-Tsu Harbor of MSX0 at 2019

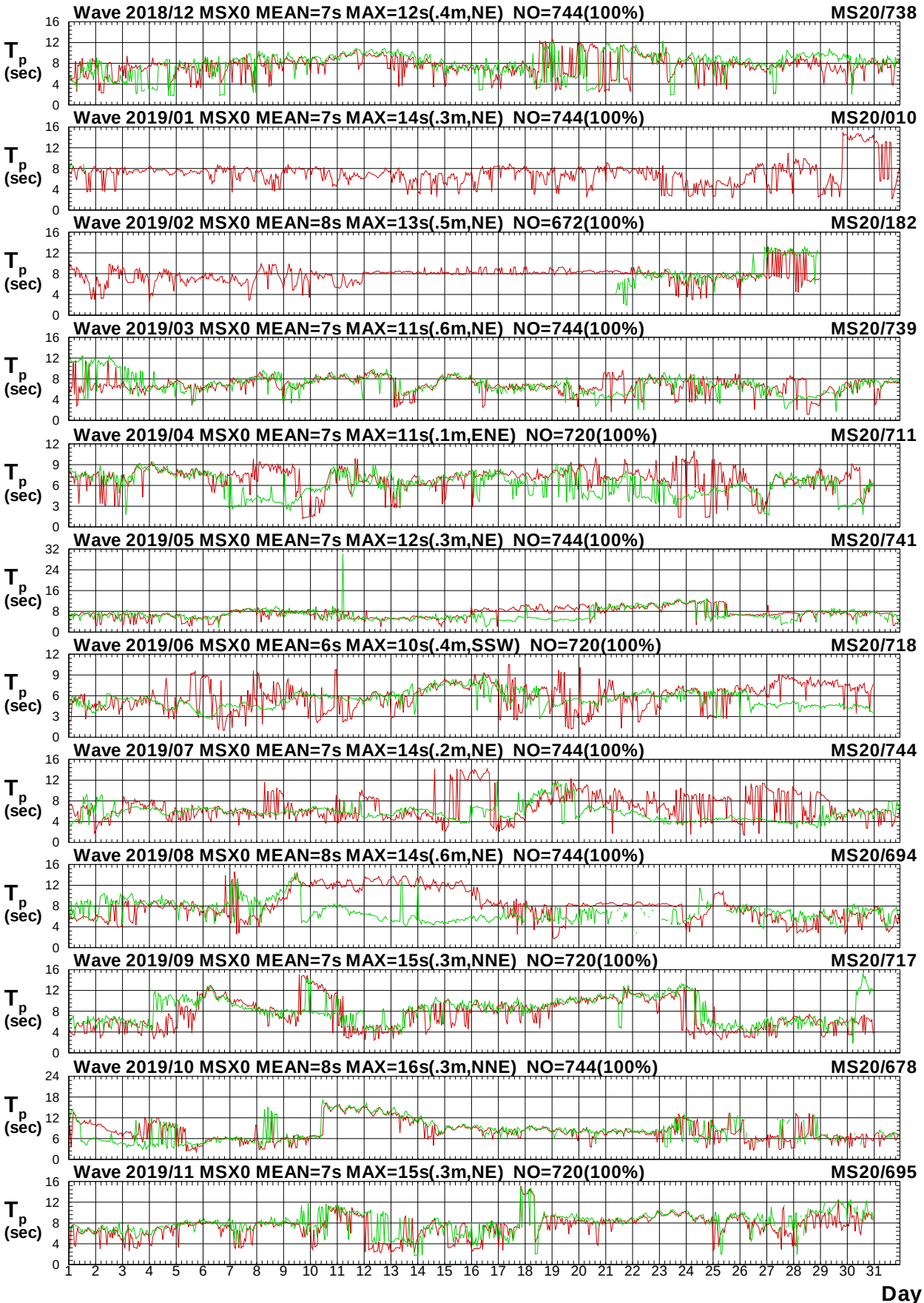


圖2.4.4b　2019年每月馬祖海域 X 站與2站週期比較圖

V18CMSX0.1HA V18CMS20.1H0 V191MSX0.1HA V191MS20.1H0 V192MSX0.1HA V192MS20.1H0
V193MSX0.1HA V193MS20.1H0 V194MSX0.1HA V194MS20.1H0 V195MSX0.1HA V195MS20.1H0

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Wave Direction in Ma-Tsu Harbor of MSX0 at 2019

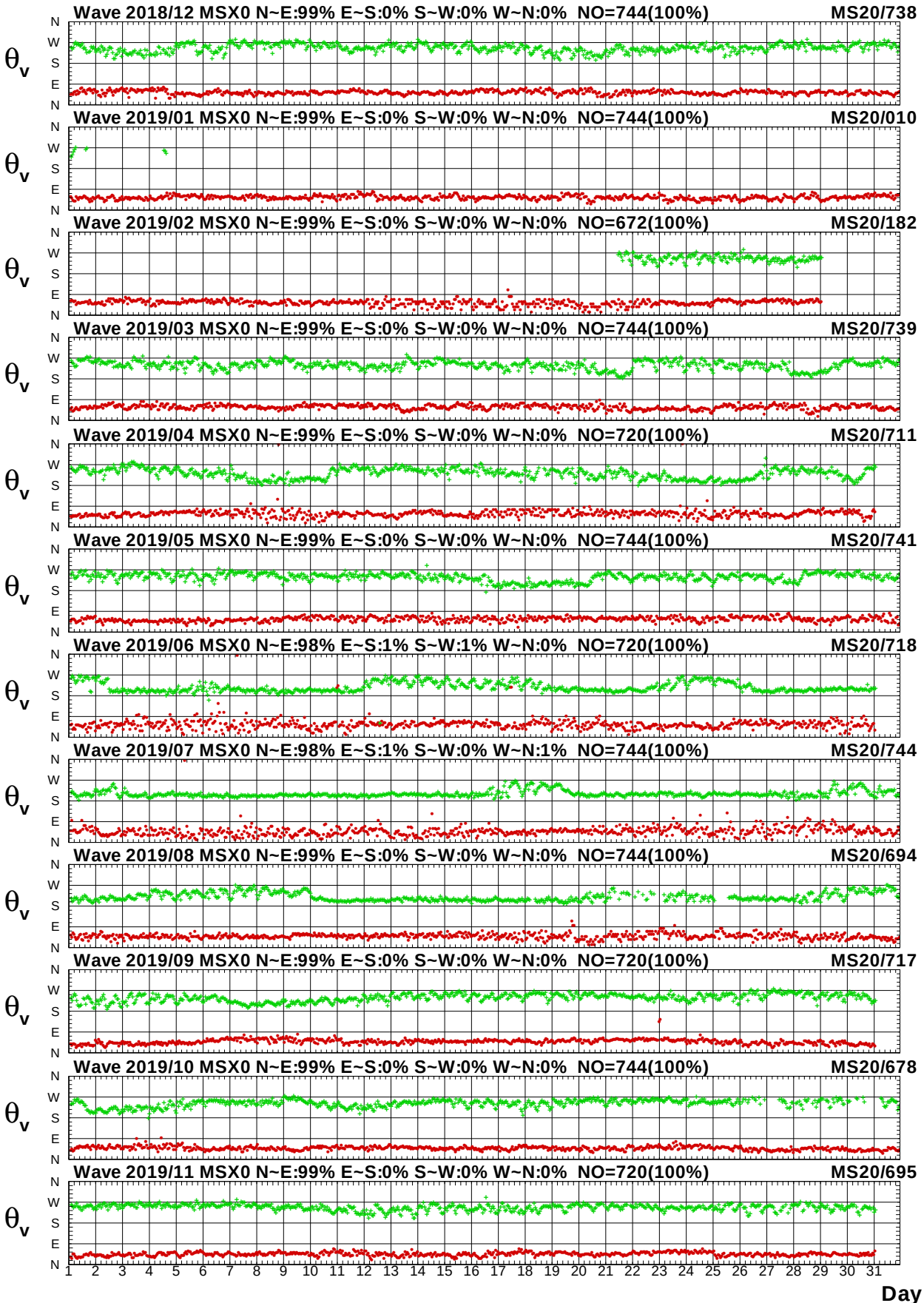


圖2.4.4c　2019年每月馬祖海域 X 站與2站波向比較圖

V18CMSX0.1HA V18CMS20.1H0 V191MSX0.1HA V191MS20.1H0 V192MSX0.1HA V192MS20.1H0
V193MSX0.1HA V193MS20.1H0 V194MSX0.1HA V194MS20.1H0 V195MSX0.1HA V195MS20.1H0

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Wave H_s in Ma-Tsu Harbor of MSX0 at 2019

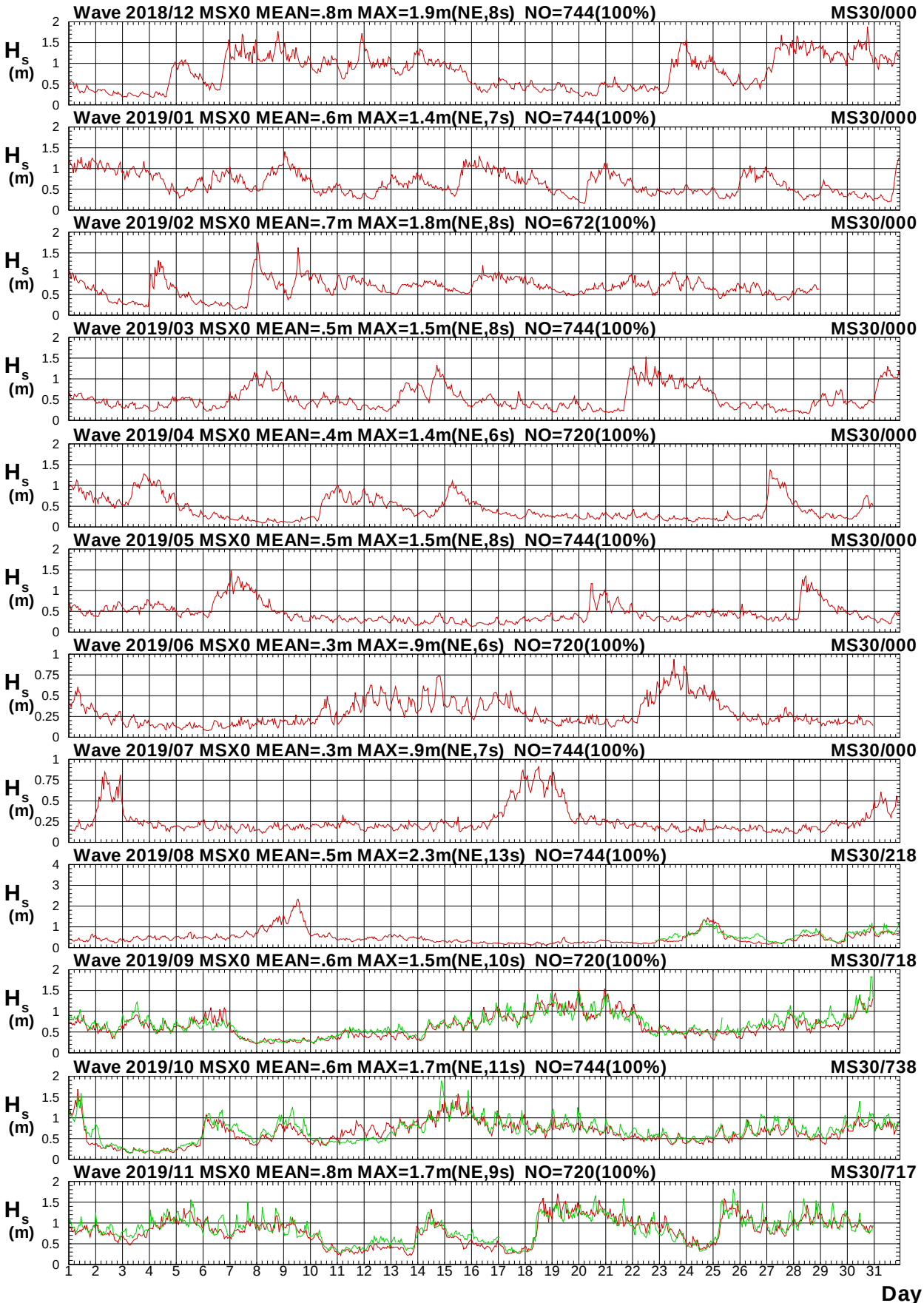


圖2.4.5a　2019年每月馬祖海域 X 站與3站波高比較圖

V18CMSX0.1HA V18CMS30.1H0 V191MSX0.1HA V191MS30.1H0 V192MSX0.1HA V192MS30.1H0
V193MSX0.1HA V193MS30.1H0 V194MSX0.1HA V194MS30.1H0 V195MSX0.1HA V195MS30.1H0

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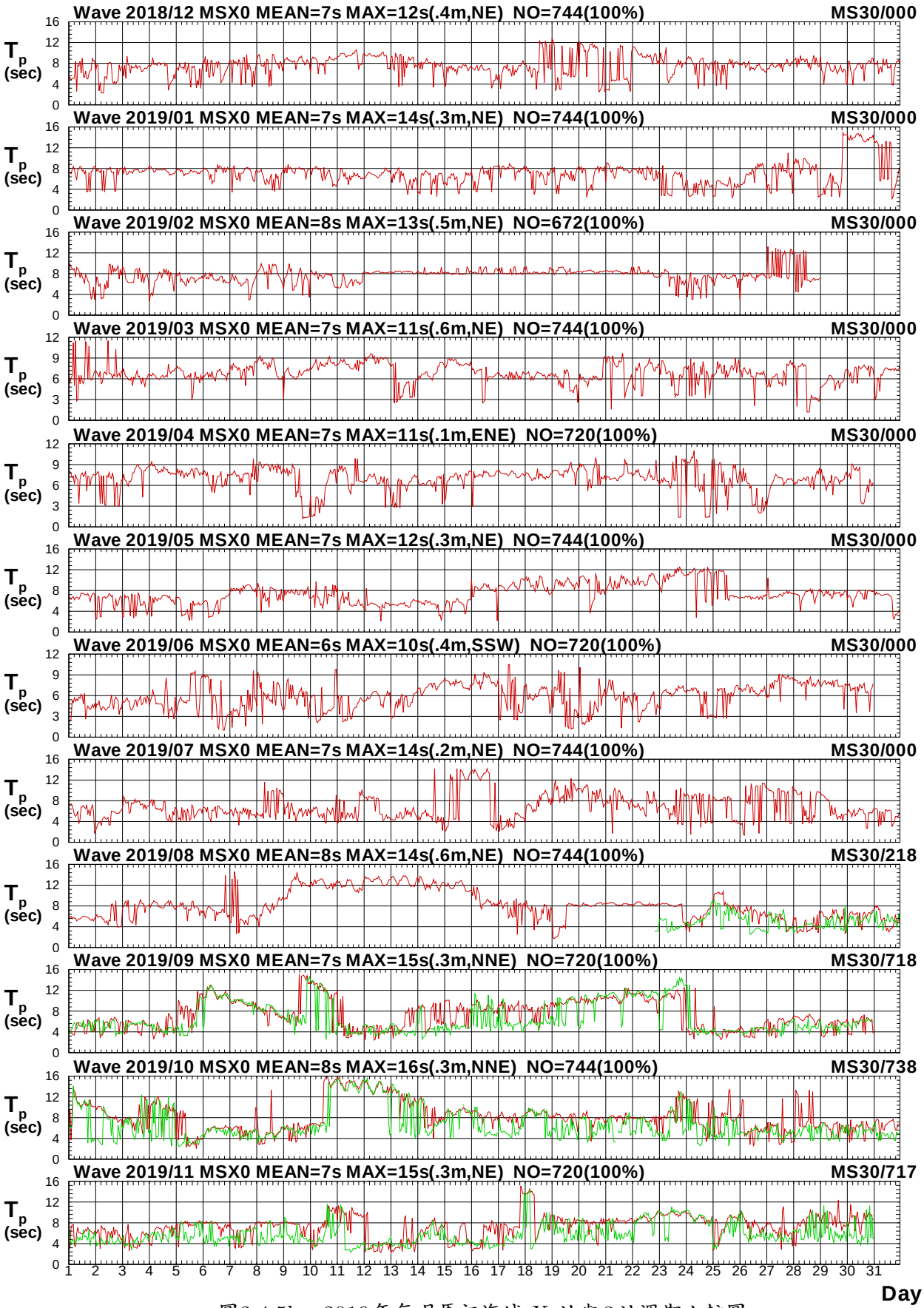


圖2.4.5b　2019年每月馬祖海域 X 站與3站週期比較圖

V18CMSX0.1HA V18CMS30.1H0 V191MSX0.1HA V191MS30.1H0 V192MSX0.1HA V192MS30.1H0
V193MSX0.1HA V193MS30.1H0 V194MSX0.1HA V194MS30.1H0 V195MSX0.1HA V195MS30.1H0

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Wave Direction in Ma-Tsu Harbor of MSX0 at 2019

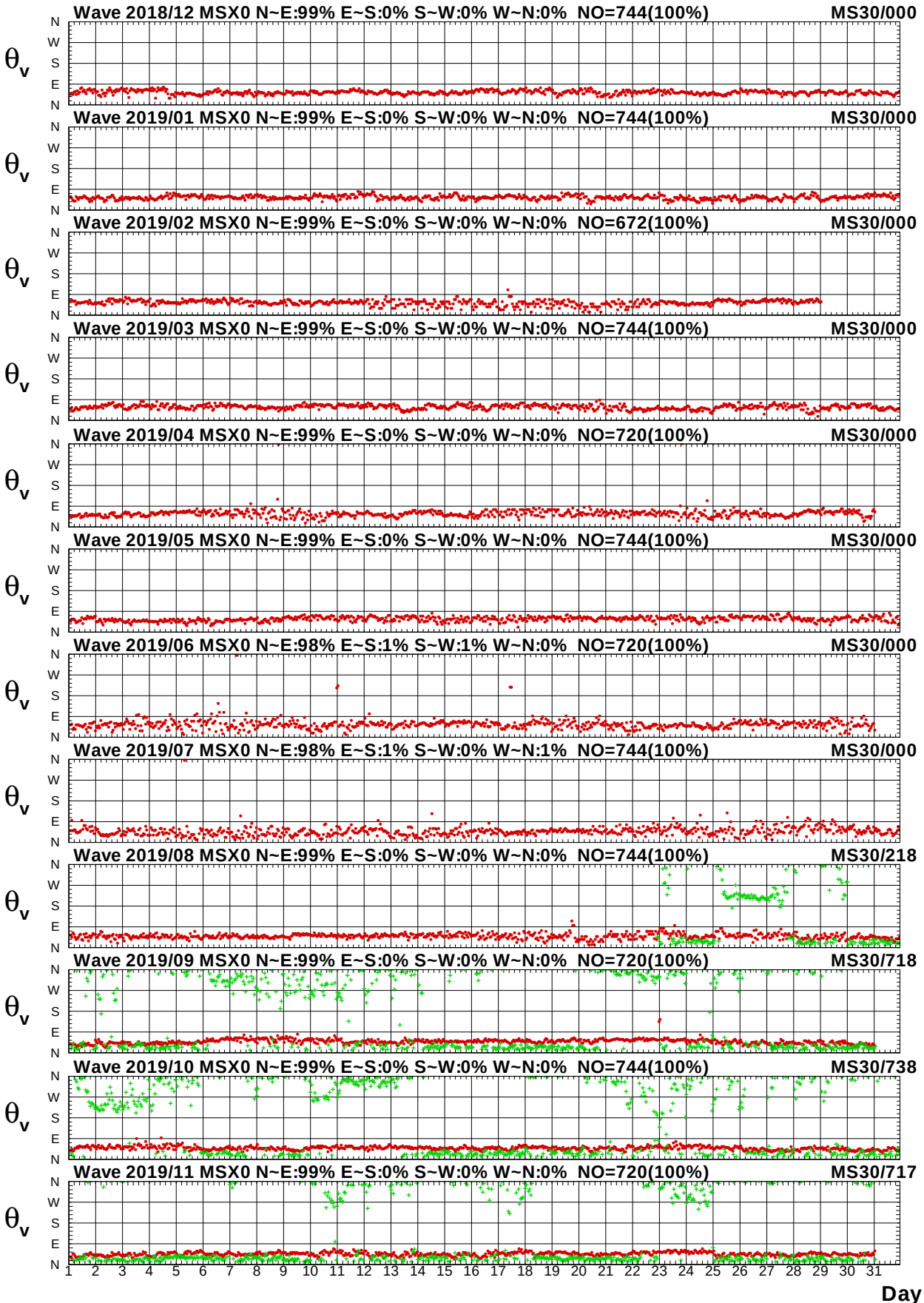


圖2.4.5c　2019年每月馬祖海域 X 站與3站波向比較圖

V18CMSX0.1HA V18CMS30.1H0 V191MSX0.1HA V191MS30.1H0 V192MSX0.1HA V192MS30.1H0
V193MSX0.1HA V193MS30.1H0 V194MSX0.1HA V194MS30.1H0 V195MSX0.1HA V195MS30.1H0

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Wave H_s in Ma-Tsu Harbor of MSX0 at 2019

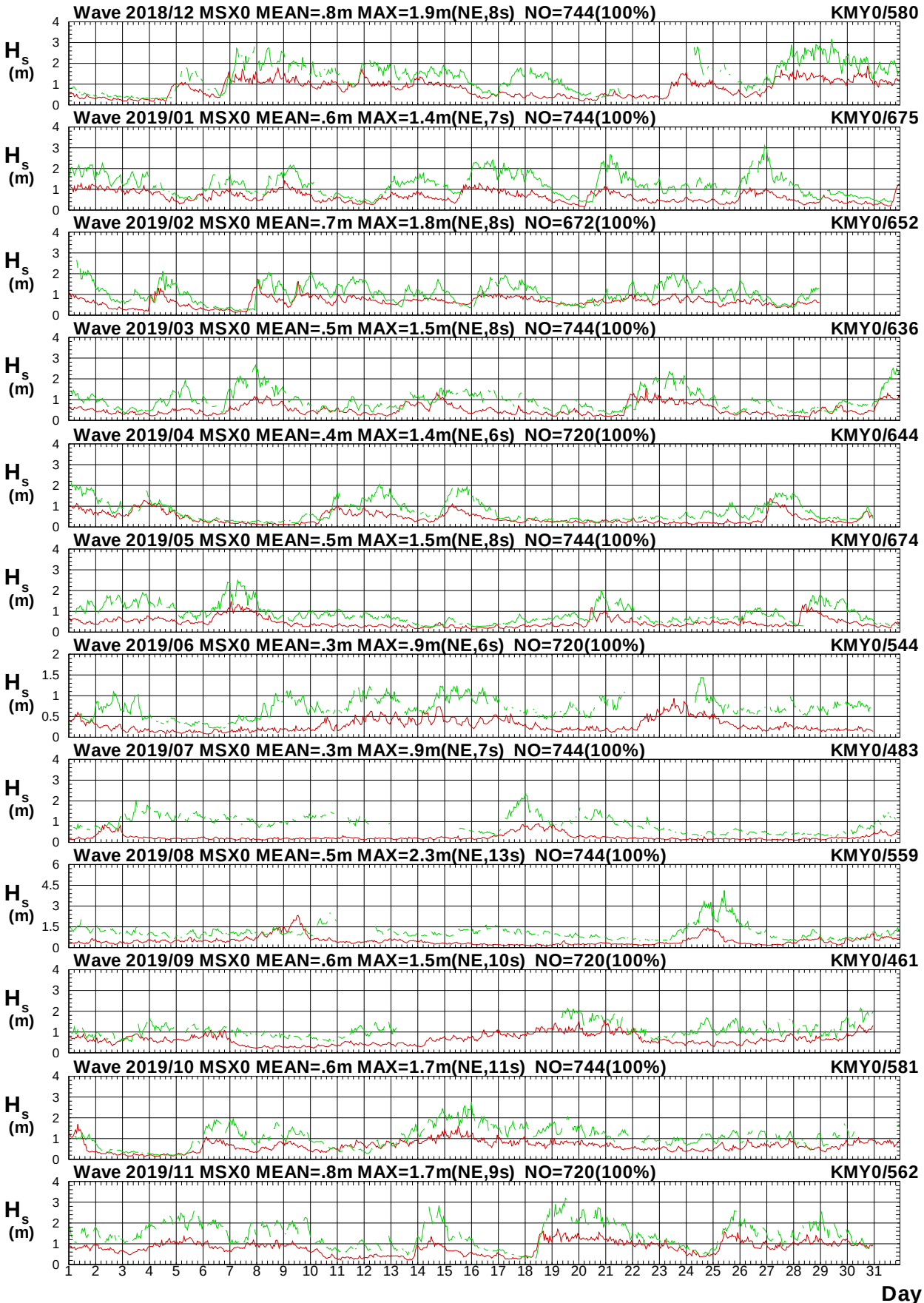


圖2.4.6a　2019年每月馬祖海域 X 站與金門海域 Y 站波高圖

V18CMSX0.1HA V18CKMY0.1H0 V191MSX0.1HA V191KMY0.1H0 V192MSX0.1HA V192KMY0.1H0
V193MSX0.1HA V193KMY0.1H0 V194MSX0.1HA V194KMY0.1H0 V195MSX0.1HA V195KMY0.1H0

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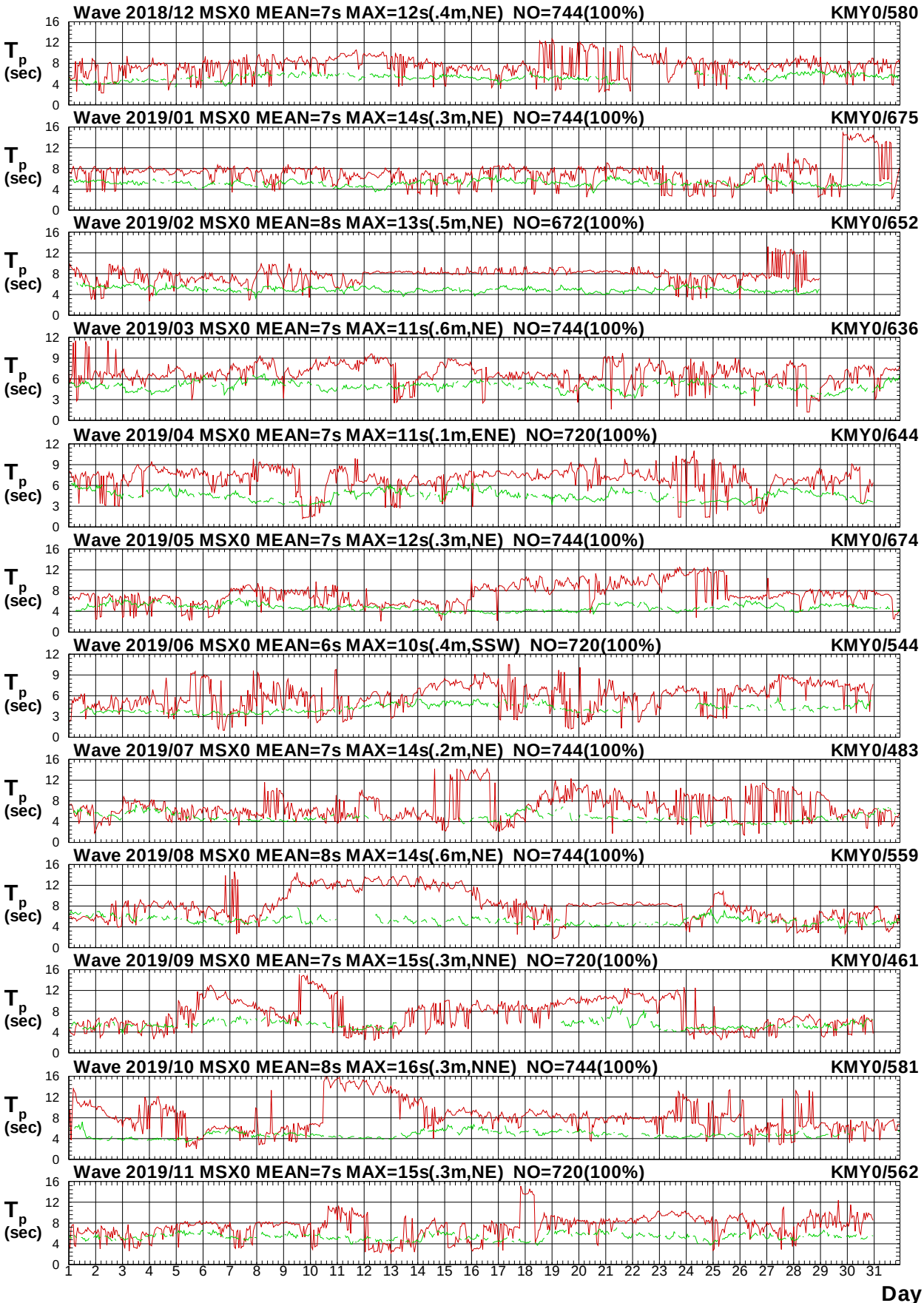


圖2.4.6b　2019年每月馬祖海域 X 站與金門海域 Y 站週期圖

V18CMSX0.1HA V18CKMY0.1H0 V191MSX0.1HA V191KMY0.1H0 V192MSX0.1HA V192KMY0.1H0
V193MSX0.1HA V193KMY0.1H0 V194MSX0.1HA V194KMY0.1H0 V195MSX0.1HA V195KMY0.1H0

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Wave Direction in Ma-Tsu Harbor of MSX0 at 2019

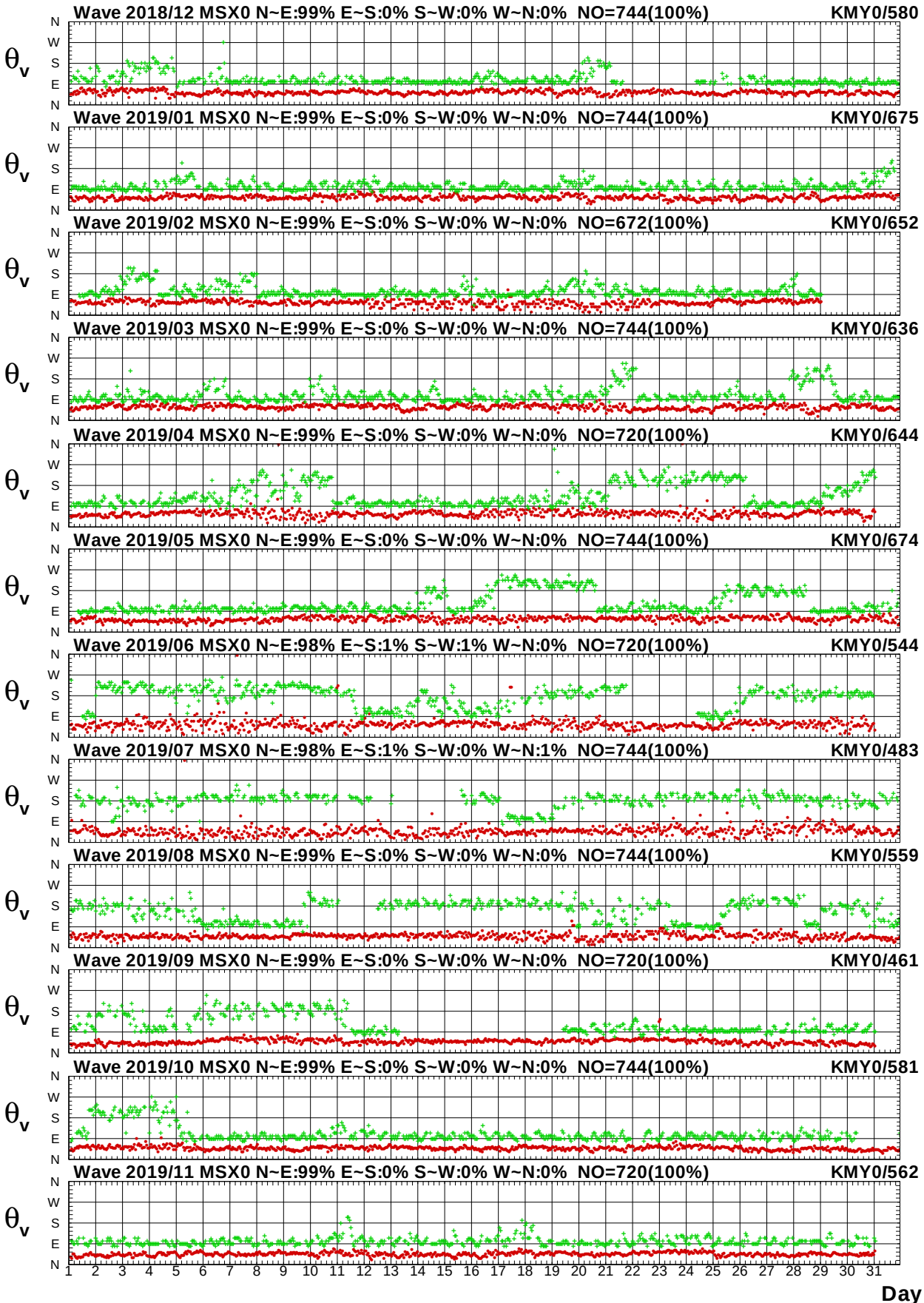


圖2.4.6c　2019年每月馬祖海域 X 站與金門海域 Y 站波向圖

V18CMSX0.1HA V18CKMY0.1H0 V191MSX0.1HA V191KMY0.1H0 V192MSX0.1HA V192KMY0.1H0
V193MSX0.1HA V193KMY0.1H0 V194MSX0.1HA V194KMY0.1H0 V195MSX0.1HA V195KMY0.1H0

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Wave H_s in Ma-Tsu Harbor of MSX0 at 2019

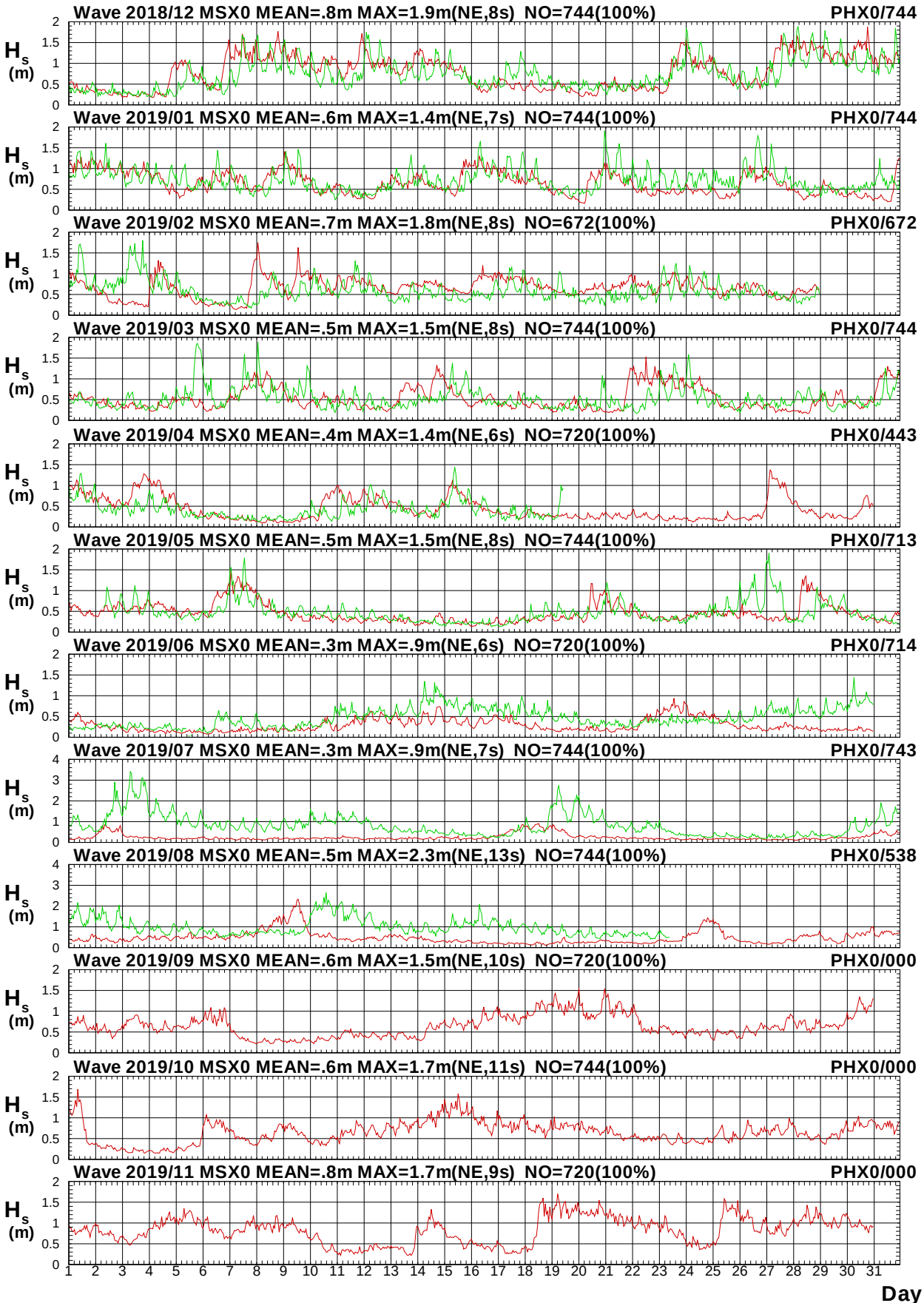


圖2.4.7a　2019年每月馬祖海域 X 站與澎湖海域 X 站波高圖

V18CMSX0.1HA V18CPHX0.1H0 V191MSX0.1HA V191PHX0.1H0 V192MSX0.1HA V192PHX0.1H0
V193MSX0.1HA V193PHX0.1H0 V194MSX0.1HA V194PHX0.1H0 V195MSX0.1HA V195PHX0.1H0

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Wave T_p in Ma-Tsu Harbor of MSX0 at 2019

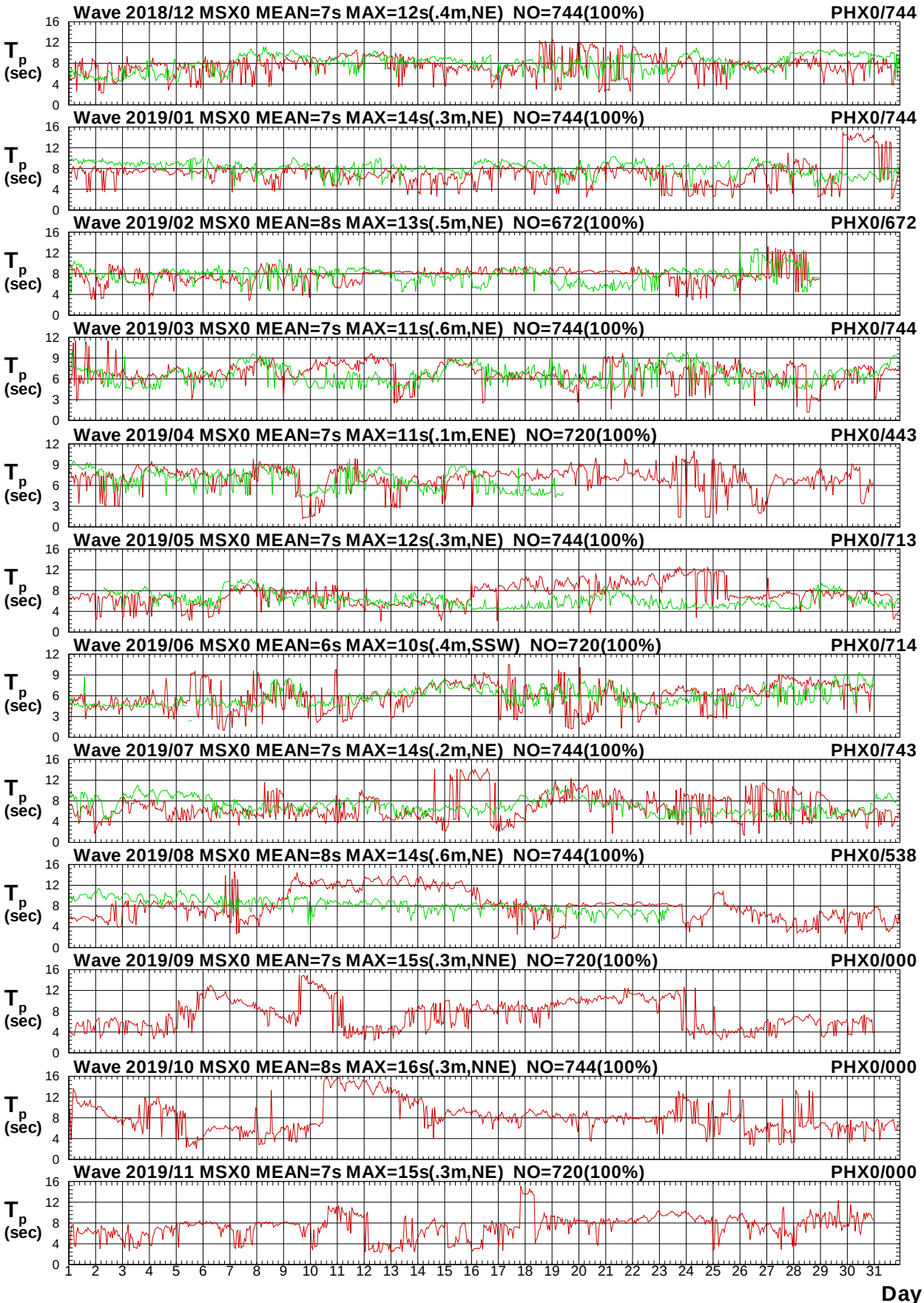


圖2.4.7b　2019年每月馬祖海域 X 站與澎湖海域 X 站週期圖

V18CMSX0.1HA V18CPHX0.1H0 V191MSX0.1HA V191PHX0.1H0 V192MSX0.1HA V192PHX0.1H0
V193MSX0.1HA V193PHX0.1H0 V194MSX0.1HA V194PHX0.1H0 V195MSX0.1HA V195PHX0.1H0

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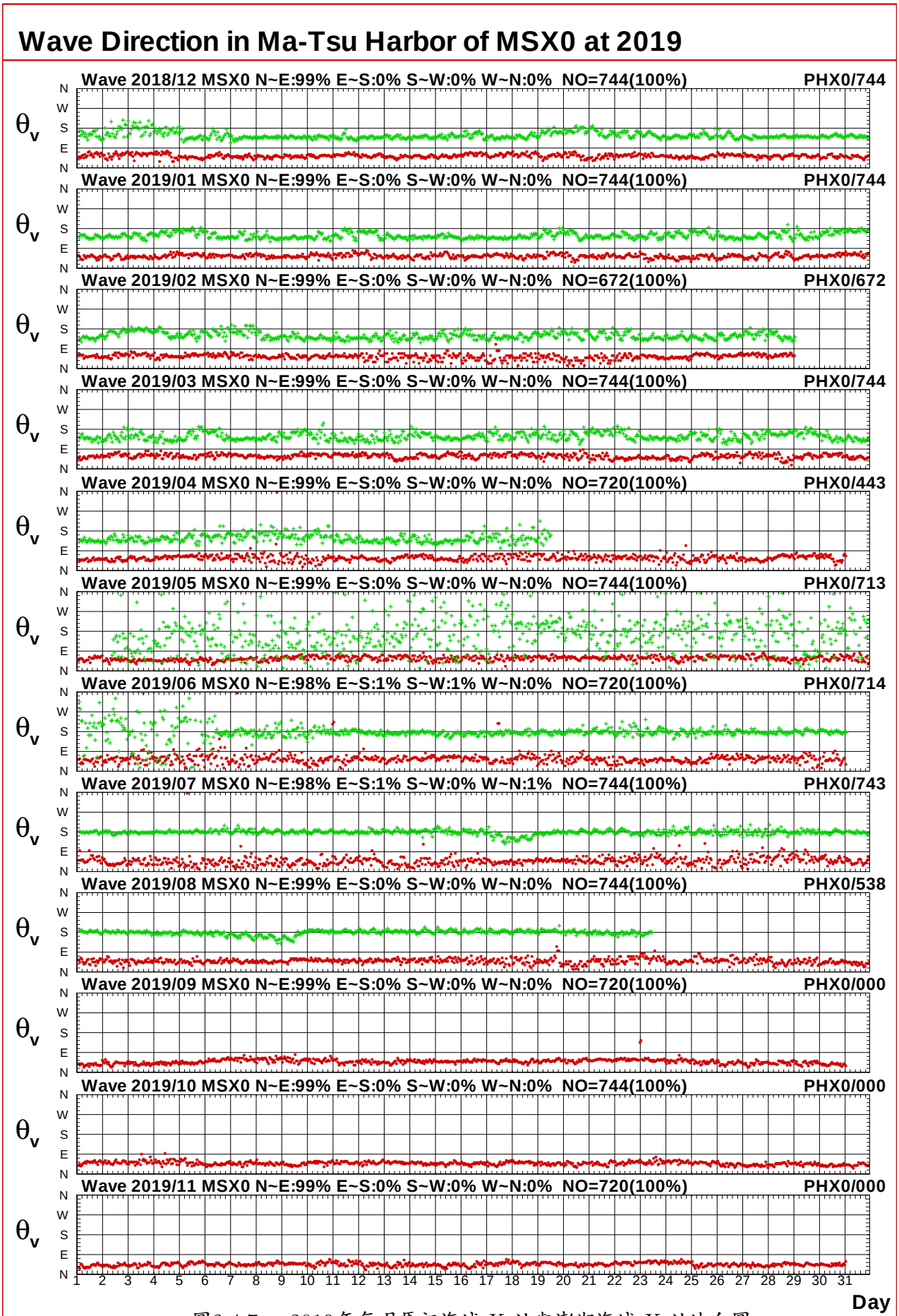


圖2.4.7c　2019年每月馬祖海域 X 站與澎湖海域 X 站波向圖

V18CMSX0.1HA V18CPHX0.1H0 V191MSX0.1HA V191PHX0.1H0 V192MSX0.1HA V192PHX0.1H0
V193MSX0.1HA V193PHX0.1H0 V194MSX0.1HA V194PHX0.1H0 V195MSX0.1HA V195PHX0.1H0

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Wave H_s in Ma-Tsu Harbor of MSX0 at 2019

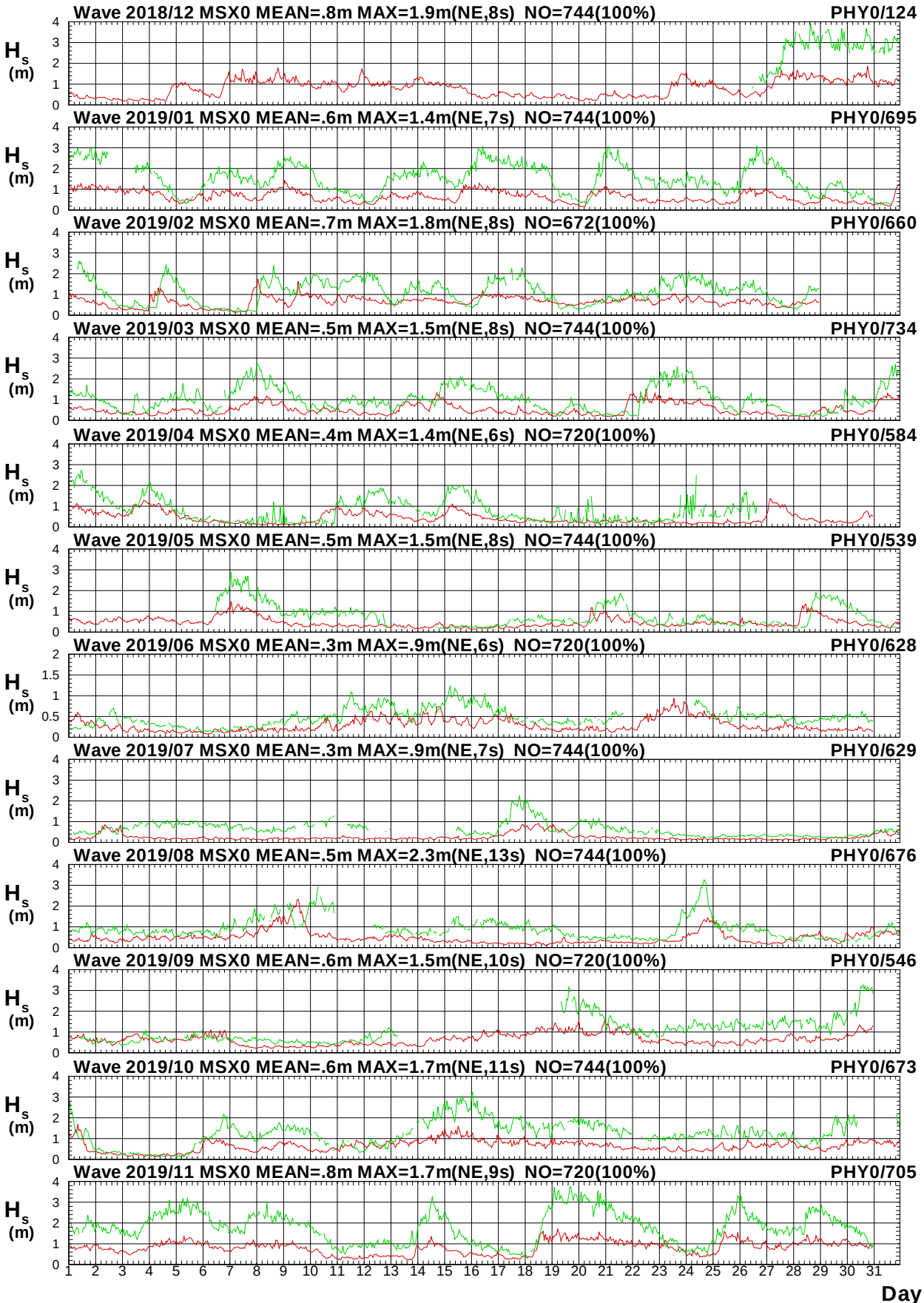


圖2.4.8a　2019年每月馬祖海域 X 站與澎湖海域 Y 站波高圖

V18CMSX0.1HA V18CPHY0.1H0 V191MSX0.1HA V191PHY0.1H0 V192MSX0.1HA V192PHY0.1H0
V193MSX0.1HA V193PHY0.1H0 V194MSX0.1HA V194PHY0.1H0 V195MSX0.1HA V195PHY0.1H0

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Wave T_p in Ma-Tsu Harbor of MSX0 at 2019

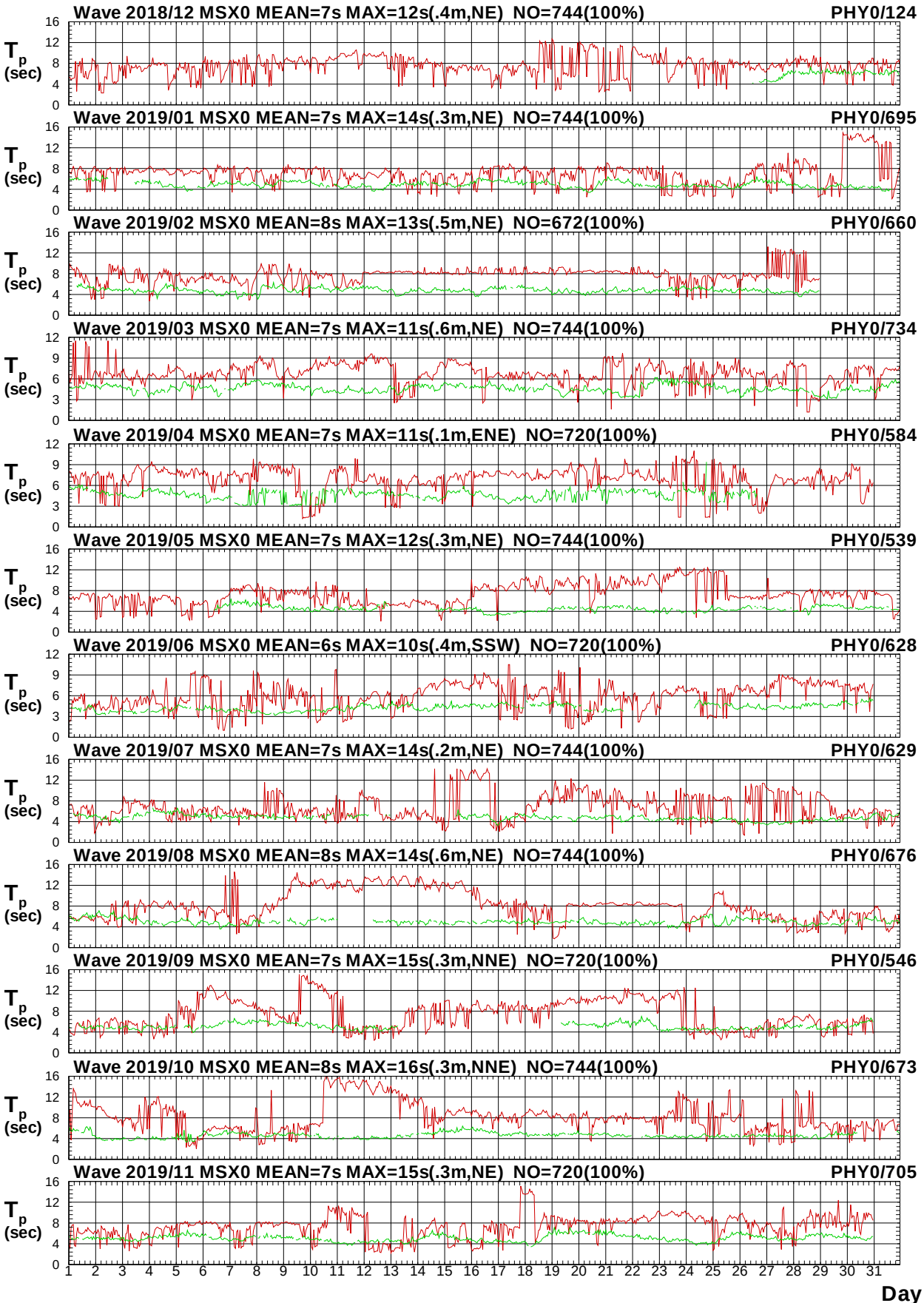


圖2.4.8b　2019年每月馬祖海域 X 站與澎湖海域 Y 站週期圖

V18CMSX0.1HA V18CPHY0.1H0 V191MSX0.1HA V191PHY0.1H0 V192MSX0.1HA V192PHY0.1H0
V193MSX0.1HA V193PHY0.1H0 V194MSX0.1HA V194PHY0.1H0 V195MSX0.1HA V195PHY0.1H0

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Wave Direction in Ma-Tsu Harbor of MSX0 at 2019

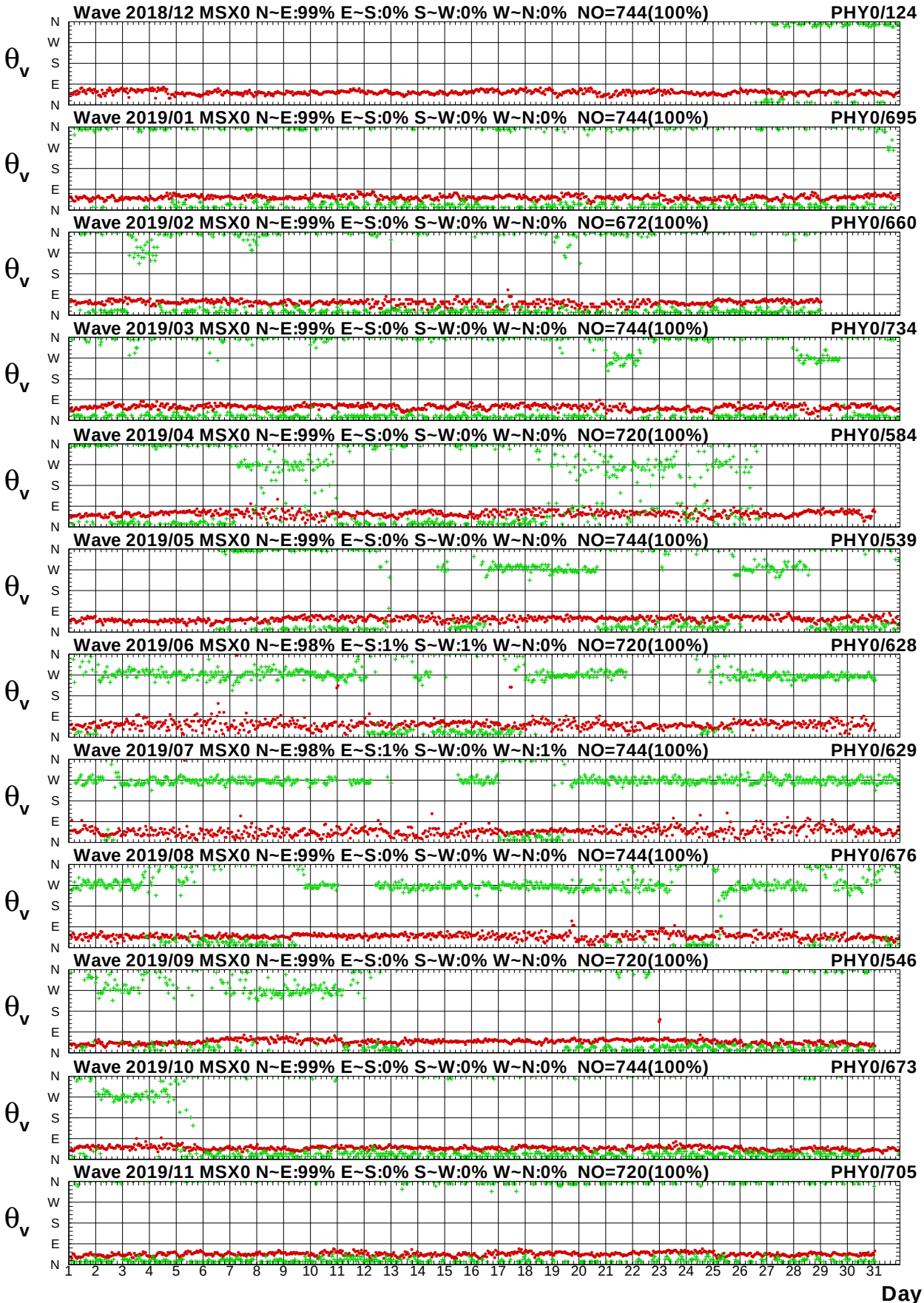


圖2.4.8c　2019年每月馬祖海域 X 站與澎湖海域 Y 站波向圖

V18CMSX0.1HA V18CPHY0.1H0 V191MSX0.1HA V191PHY0.1H0 V192MSX0.1HA V192PHY0.1H0
V193MSX0.1HA V193PHY0.1H0 V194MSX0.1HA V194PHY0.1H0 V195MSX0.1HA V195PHY0.1H0

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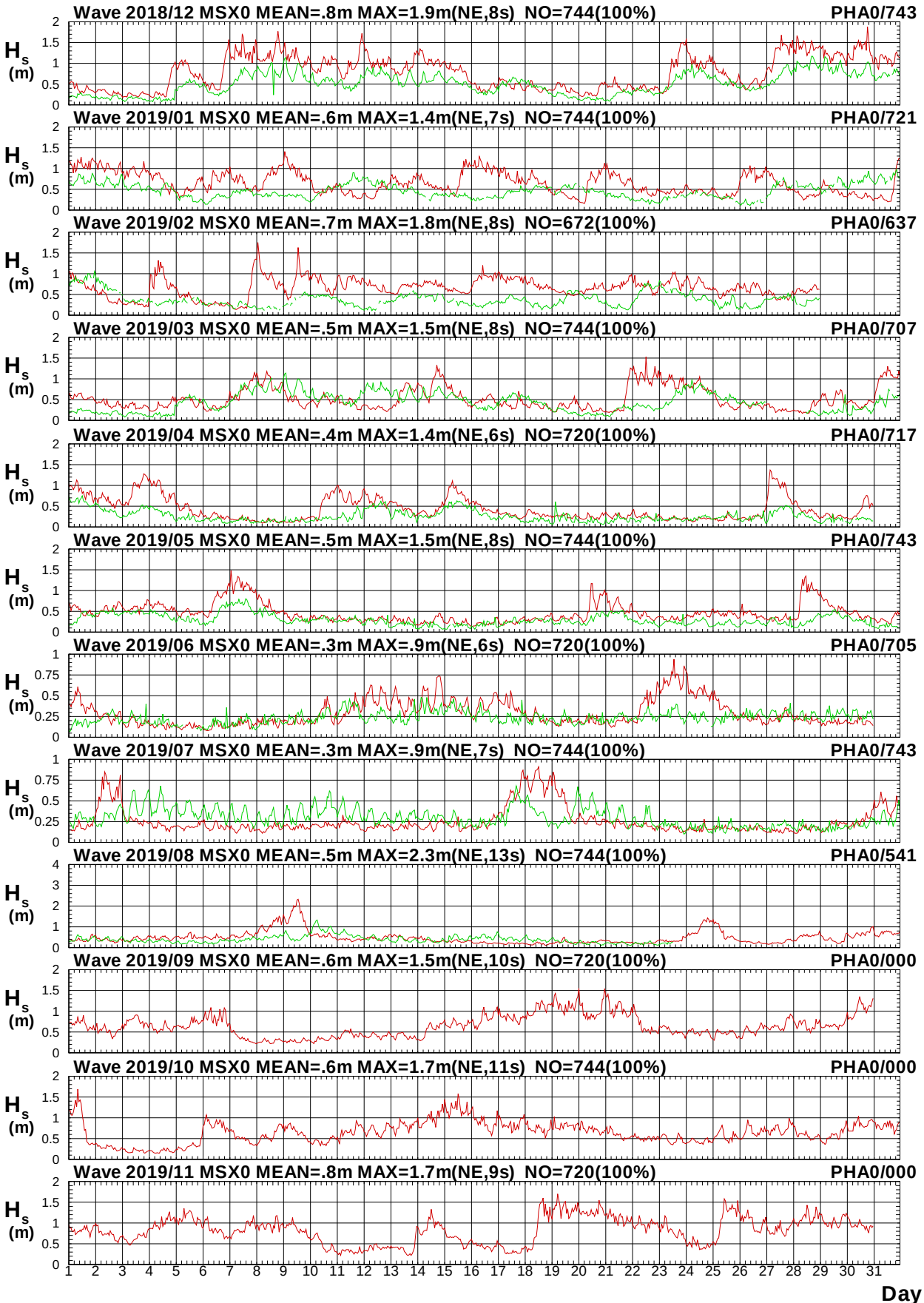


圖2.4.9a　2019年每月馬祖海域 X 站與澎湖海域 A 站波高圖

V18CMSX0.1HA V18CPHA0.1H0 V191MSX0.1HA V191PHA0.1H0 V192MSX0.1HA V192PHA0.1H0
V193MSX0.1HA V193PHA0.1H0 V194MSX0.1HA V194PHA0.1H0 V195MSX0.1HA V195PHA0.1H0

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Wave T_p in Ma-Tsu Harbor of MSX0 at 2019

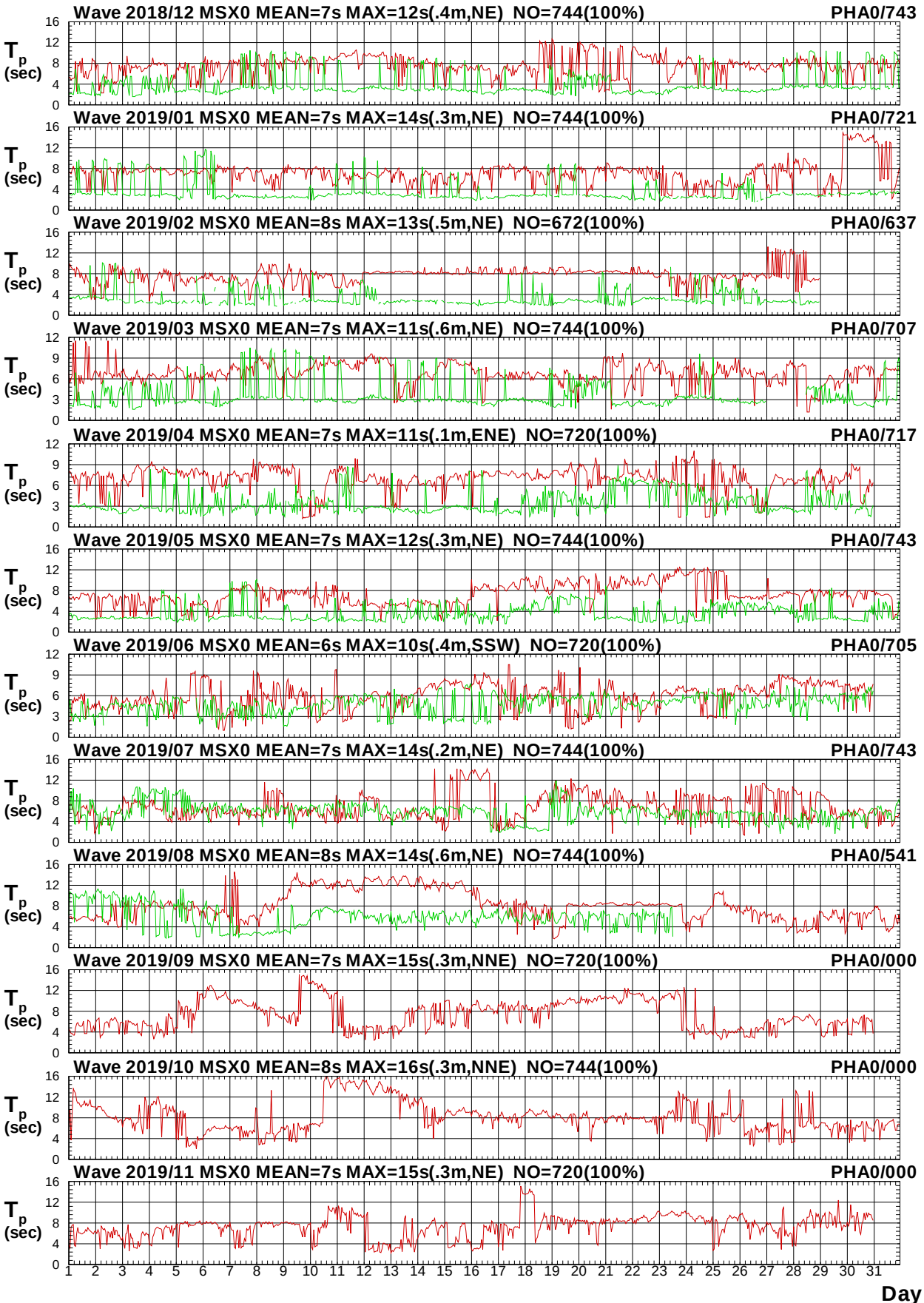


圖2.4.9b　2019年每月馬祖海域 X 站與澎湖海域 A 站週期圖

V18CMSX0.1HA V18CPHA0.1H0 V191MSX0.1HA V191PHA0.1H0 V192MSX0.1HA V192PHA0.1H0
V193MSX0.1HA V193PHA0.1H0 V194MSX0.1HA V194PHA0.1H0 V195MSX0.1HA V195PHA0.1H0

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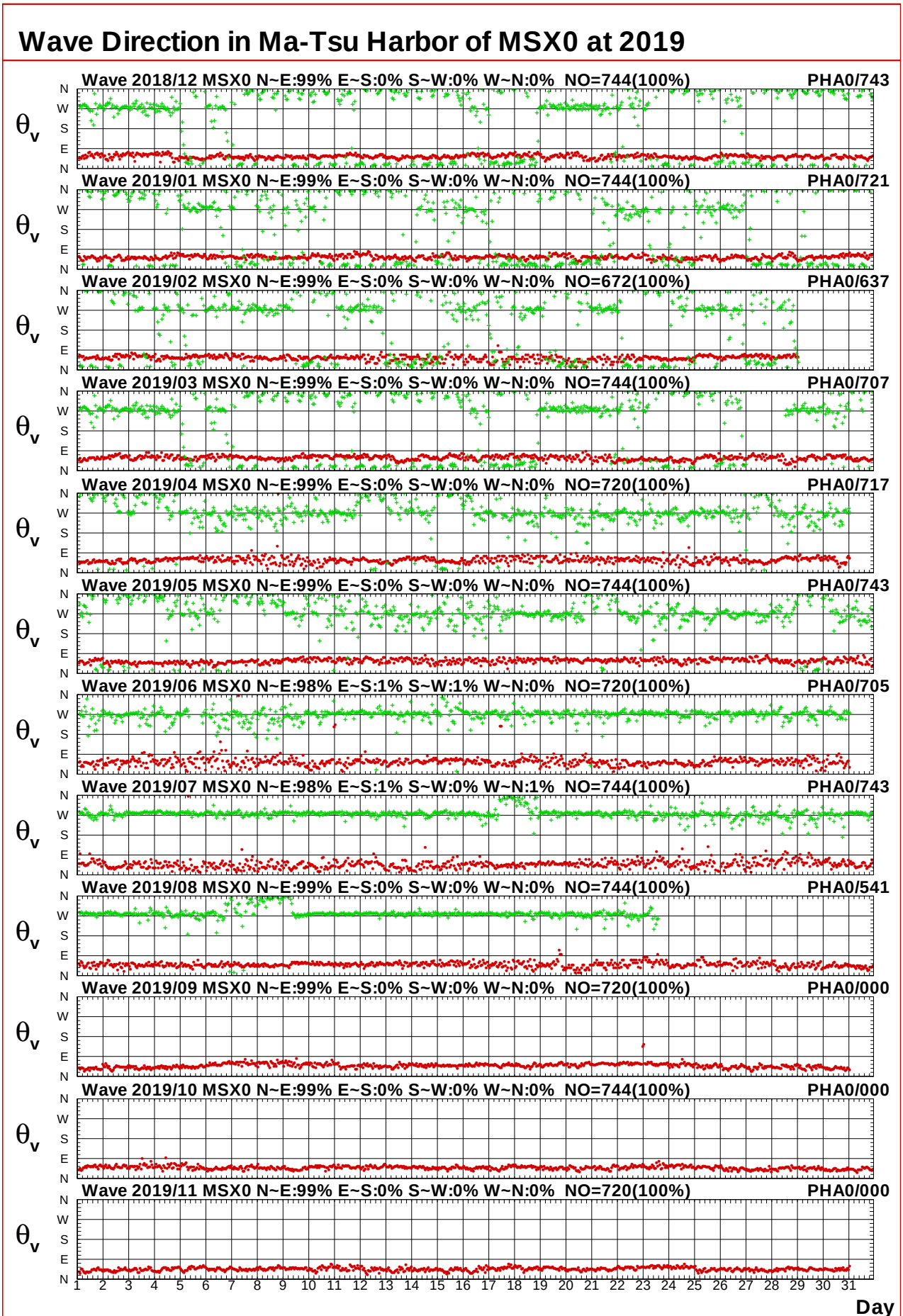


圖2.4.9c　2019年每月馬祖海域 X 站與澎湖海域 A 站波向圖

V18CMSX0.1HA V18CPHA0.1H0 V191MSX0.1HA V191PHA0.1H0 V192MSX0.1HA V192PHA0.1H0
V193MSX0.1HA V193PHA0.1H0 V194MSX0.1HA V194PHA0.1H0 V195MSX0.1HA V195PHA0.1H0

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Wave H_s in Ma-Tsu Harbor of MSX0 at 2019

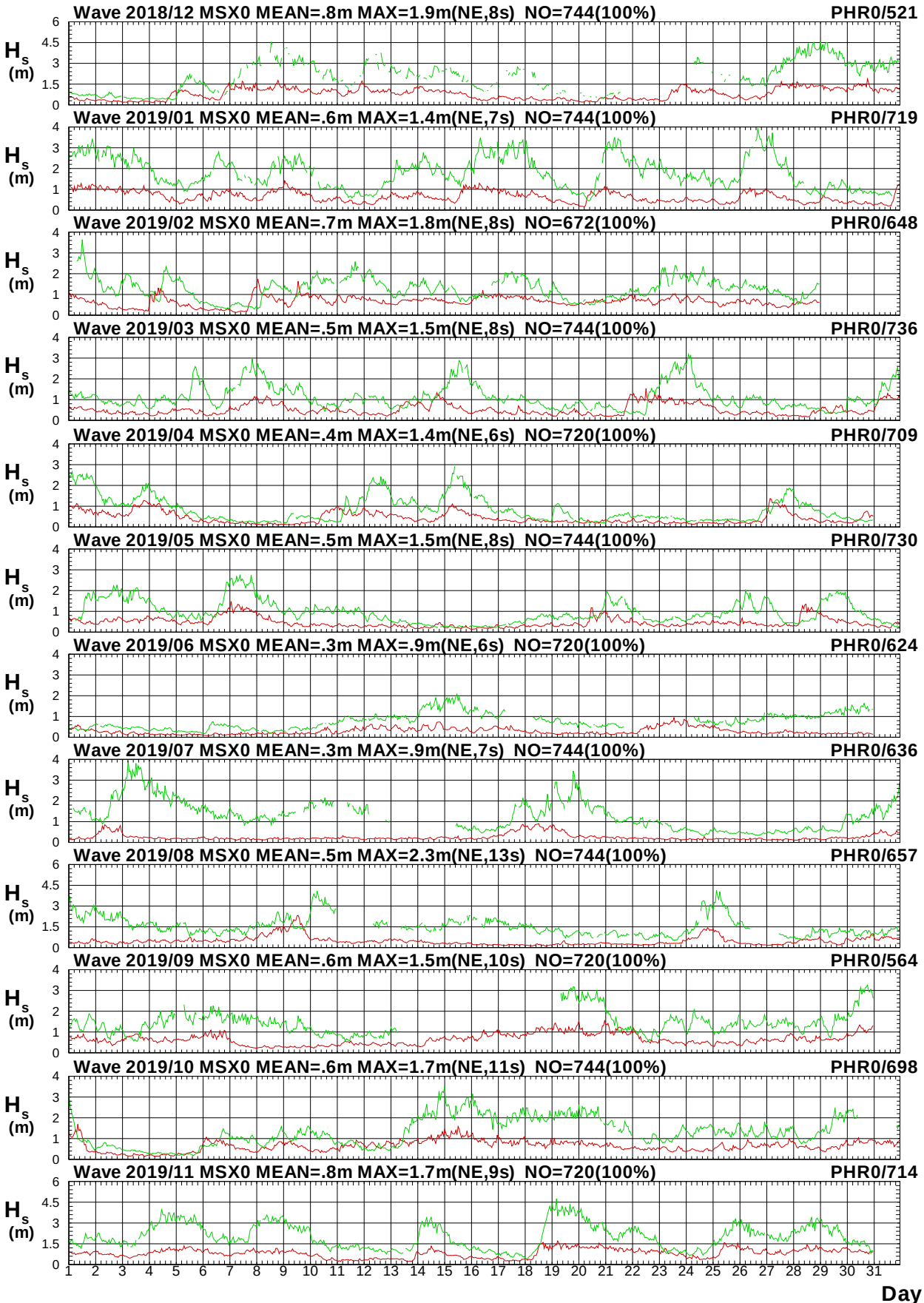


圖2.4.10a　2019年每月馬祖海域 X 站與澎湖海域 R 站波高圖

V18CMSX0.1HA V18CPHR0.1H0 V191MSX0.1HA V191PHR0.1H0 V192MSX0.1HA V192PHR0.1H0
V193MSX0.1HA V193PHR0.1H0 V194MSX0.1HA V194PHR0.1H0 V195MSX0.1HA V195PHR0.1H0

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Wave T_p in Ma-Tsu Harbor of MSX0 at 2019

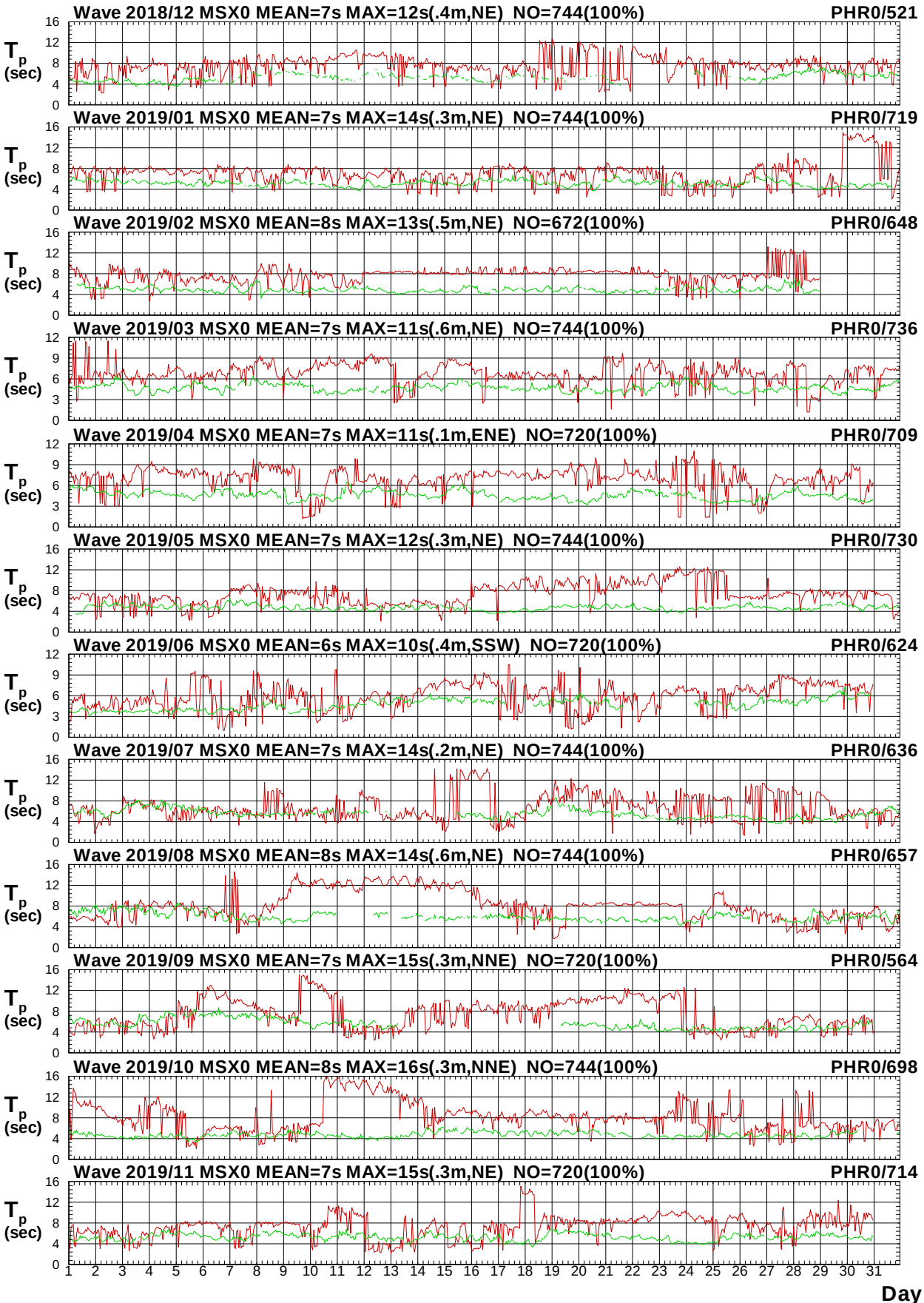


圖2.4.10b　2019年每月馬祖海域 X 站與澎湖海域 R 站週期圖

V18CMSX0.1HA V18CPHR0.1H0 V191MSX0.1HA V191PHR0.1H0 V192MSX0.1HA V192PHR0.1H0
V193MSX0.1HA V193PHR0.1H0 V194MSX0.1HA V194PHR0.1H0 V195MSX0.1HA V195PHR0.1H0

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Wave Direction in Ma-Tsu Harbor of MSX0 at 2019

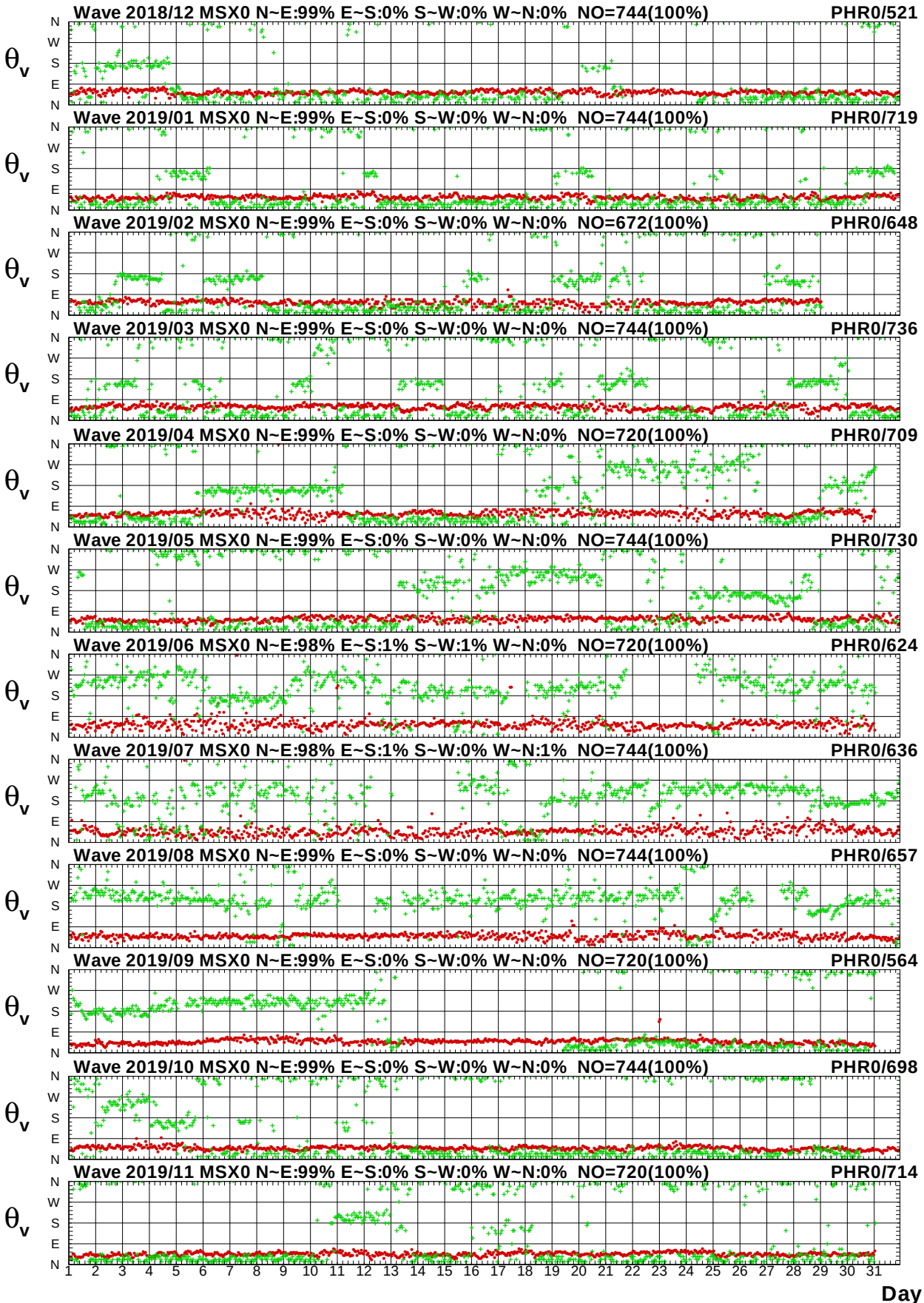


圖2.4.10c　2019年每月馬祖海域 X 站與澎湖海域 R 站波向圖

V18CMSX0.1HA V18CPHR0.1H0 V191MSX0.1HA V191PHR0.1H0 V192MSX0.1HA V192PHR0.1H0
V193MSX0.1HA V193PHR0.1H0 V194MSX0.1HA V194PHR0.1H0 V195MSX0.1HA V195PHR0.1H0

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2.5　2019 年馬祖海域波浪各測站修補前

波浪向量分佈圖

Distribution of H_s Vectores

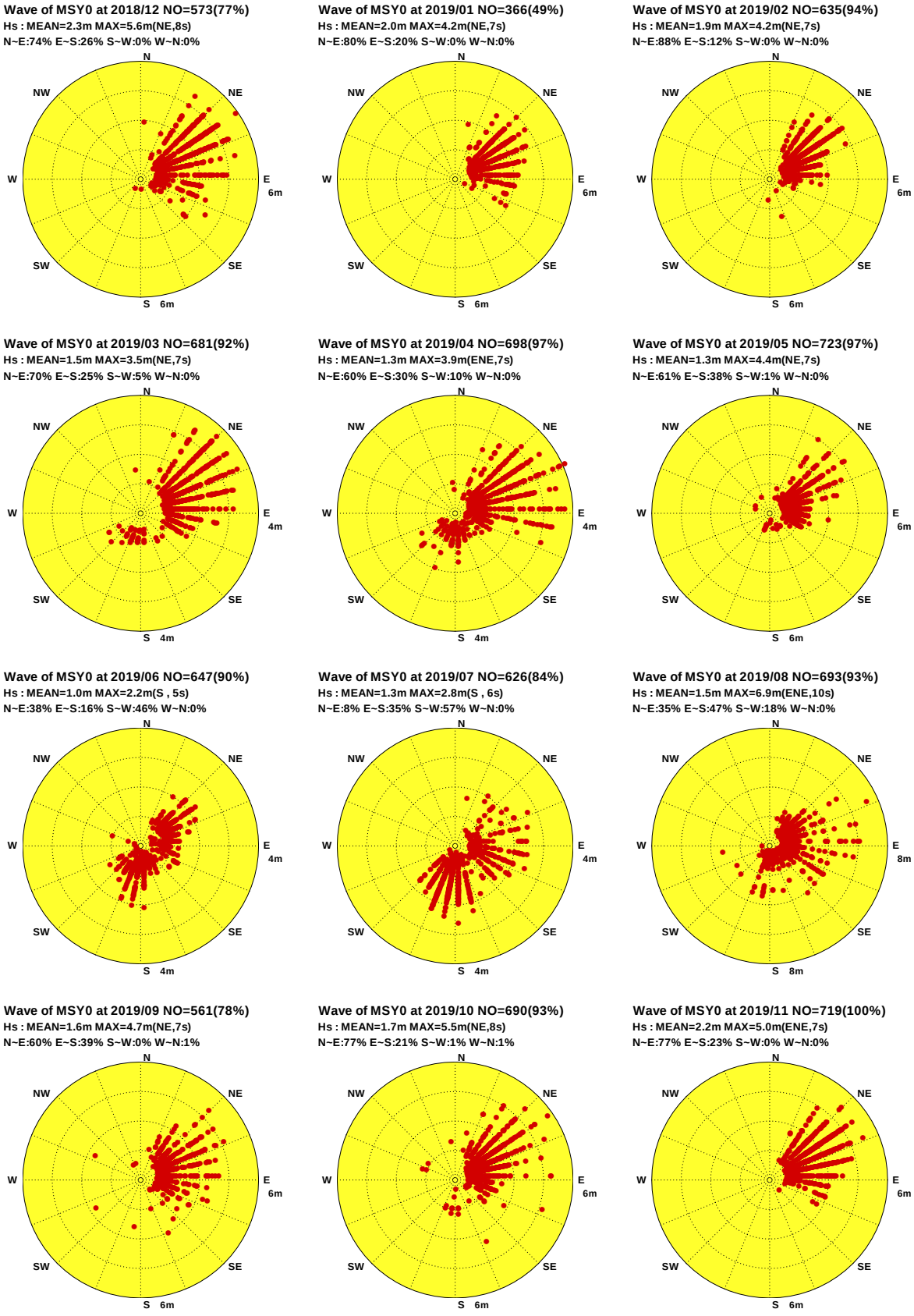


圖2.5.1 2019年馬祖海域每月 Y 站修補前觀測波高向量分佈圖

V18CMSY0.1H0 V191MSY0.1H0 V192MSY0.1H0 V193MSY0.1H0 V194MSY0.1H0 V195MSY0.1H0
V196MSY0.1H0 V197MSY0.1H0 V198MSY0.1H0 V199MSY0.1H0 V19AMSY0.1H0 V19BMSY0.1H0

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Distribution of H_s Vectores

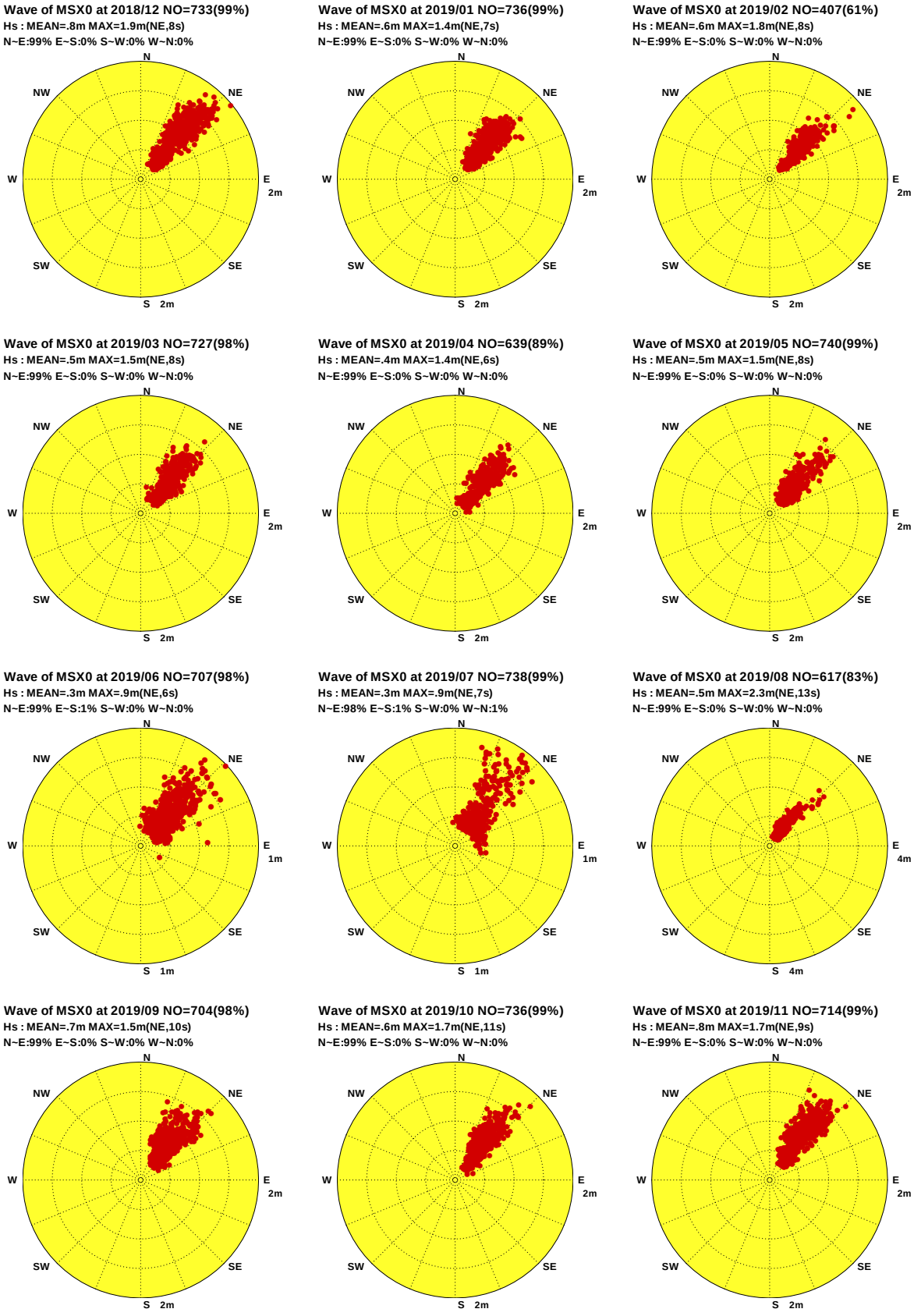


圖2.5.2 2019年馬祖海域每月 X 站修補前觀測波高向量分佈圖

V18CMSX0.1H0 V191MSX0.1H0 V192MSX0.1H0 V193MSX0.1H0 V194MSX0.1H0 V195MSX0.1H0
V196MSX0.1H0 V197MSX0.1H0 V198MSX0.1H0 V199MSX0.1H0 V19AMSX0.1H0 V19BMSX0.1H0

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Distribution of H_s Vectores

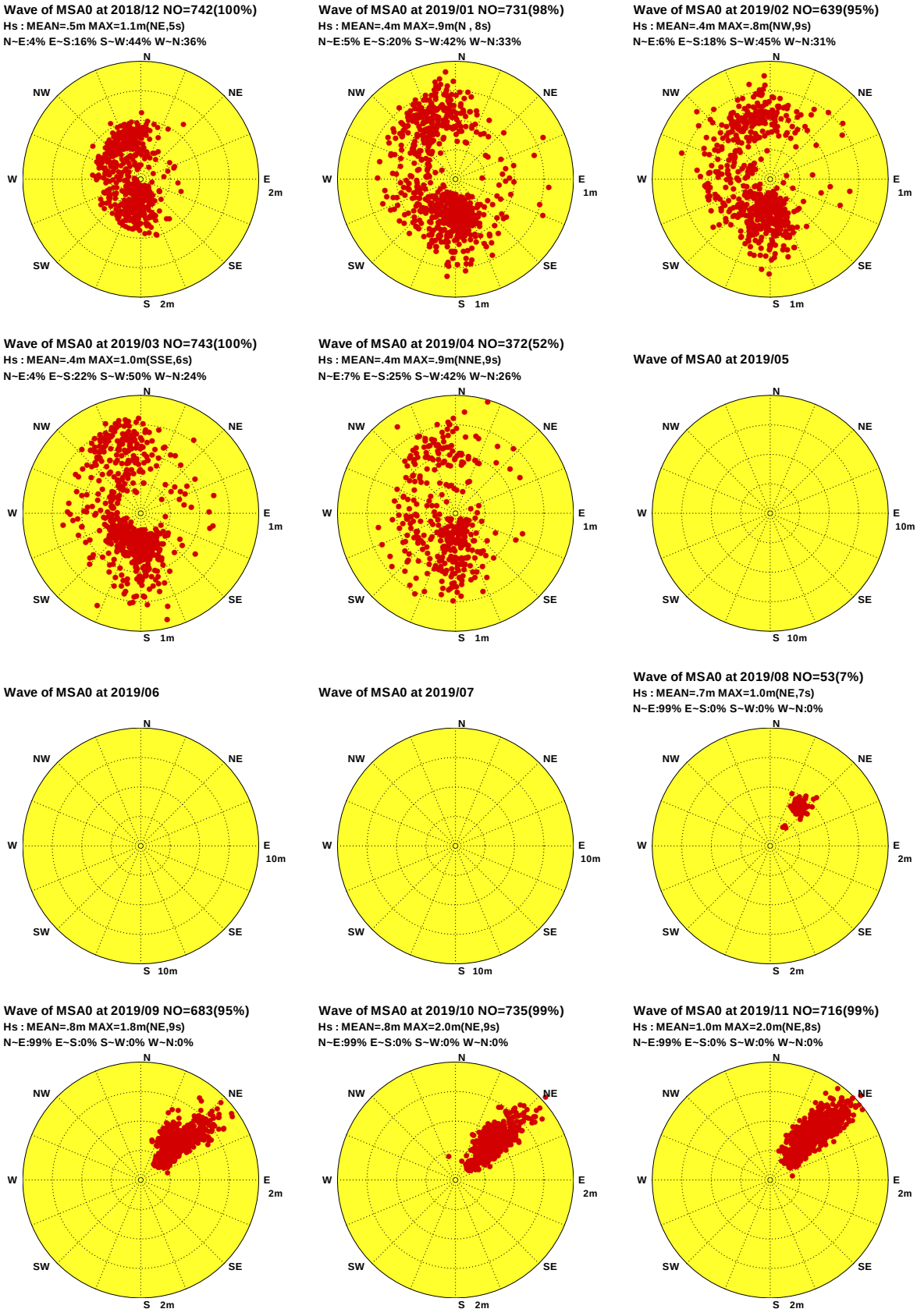


圖2.5.3 2019年馬祖海域每月 A 站修補前觀測波高向量分佈圖

V18CMSA0.1H0 V191MSA0.1H0 V192MSA0.1H0 V193MSA0.1H0 V194MSA0.1H0 V195MSA0.1H0
V196MSA0.1H0 V197MSA0.1H0 V198MSA0.1H0 V199MSA0.1H0 V19AMSA0.1H0 V19BMSA0.1H0

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Distribution of H_s Vectores

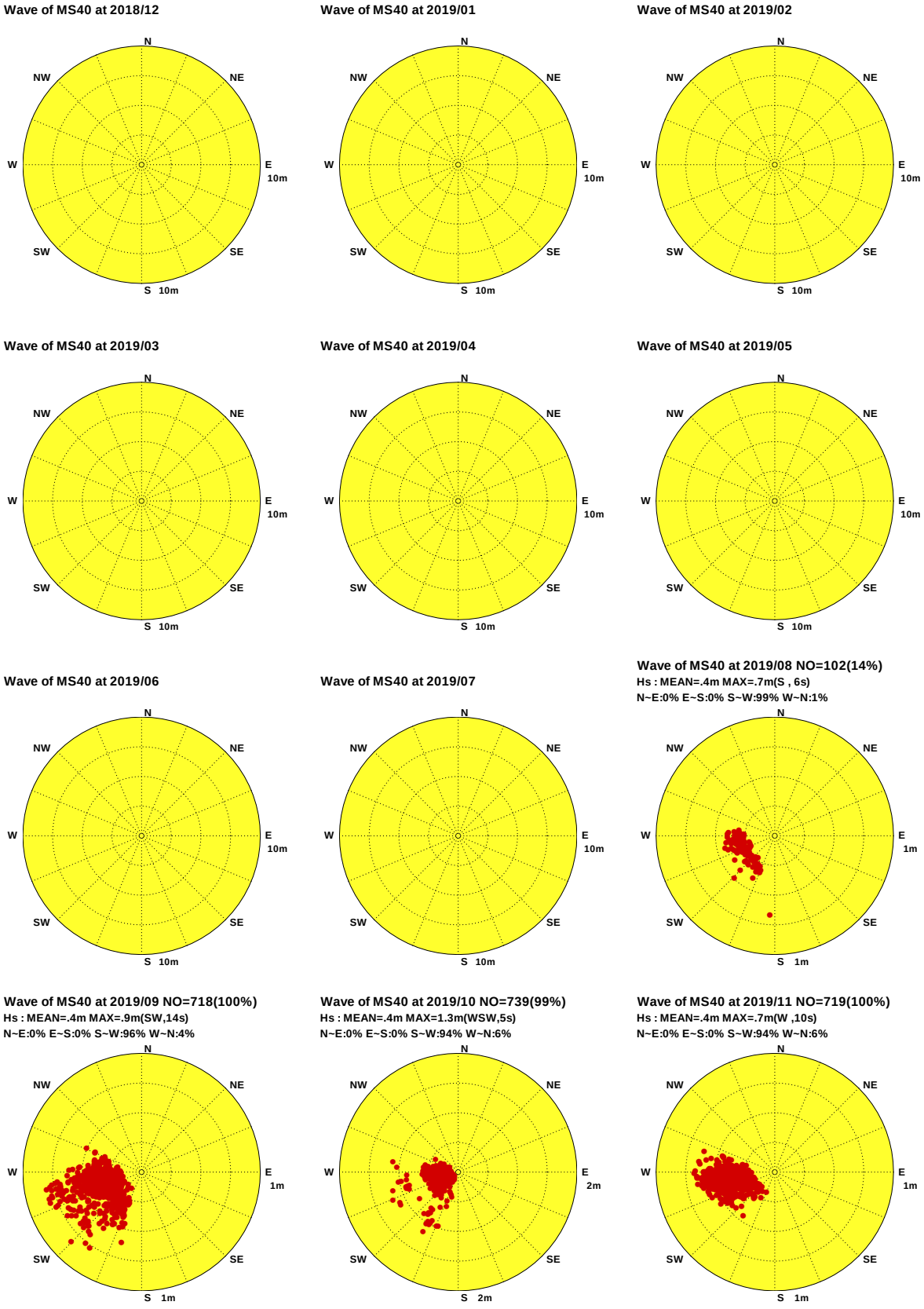


圖2.5.4 2019年馬祖海域每月 4站修補前觀測波高向量分佈圖

V18CMS40.1H0 V191MS40.1H0 V192MS40.1H0 V193MS40.1H0 V194MS40.1H0 V195MS40.1H0
V196MS40.1H0 V197MS40.1H0 V198MS40.1H0 V199MS40.1H0 V19AMS40.1H0 V19BMS40.1H0

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Distribution of H_s Vectores

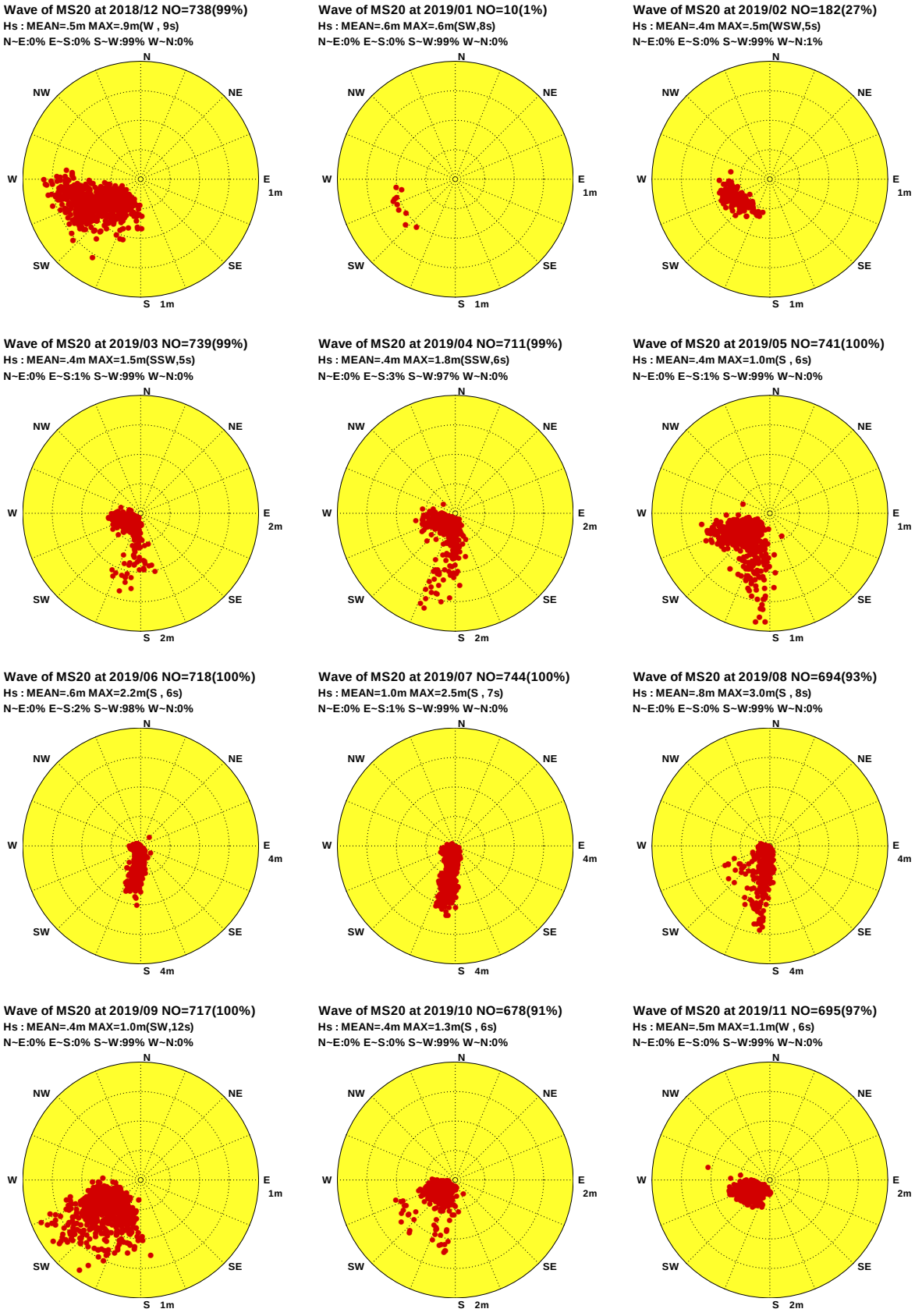


圖2.5.5 2019年馬祖海域每月 2站修補前觀測波高向量分佈圖

V18CMS20.1H0 V191MS20.1H0 V192MS20.1H0 V193MS20.1H0 V194MS20.1H0 V195MS20.1H0
V196MS20.1H0 V197MS20.1H0 V198MS20.1H0 V199MS20.1H0 V19AMS20.1H0 V19BMS20.1H0

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Distribution of H_s Vectores

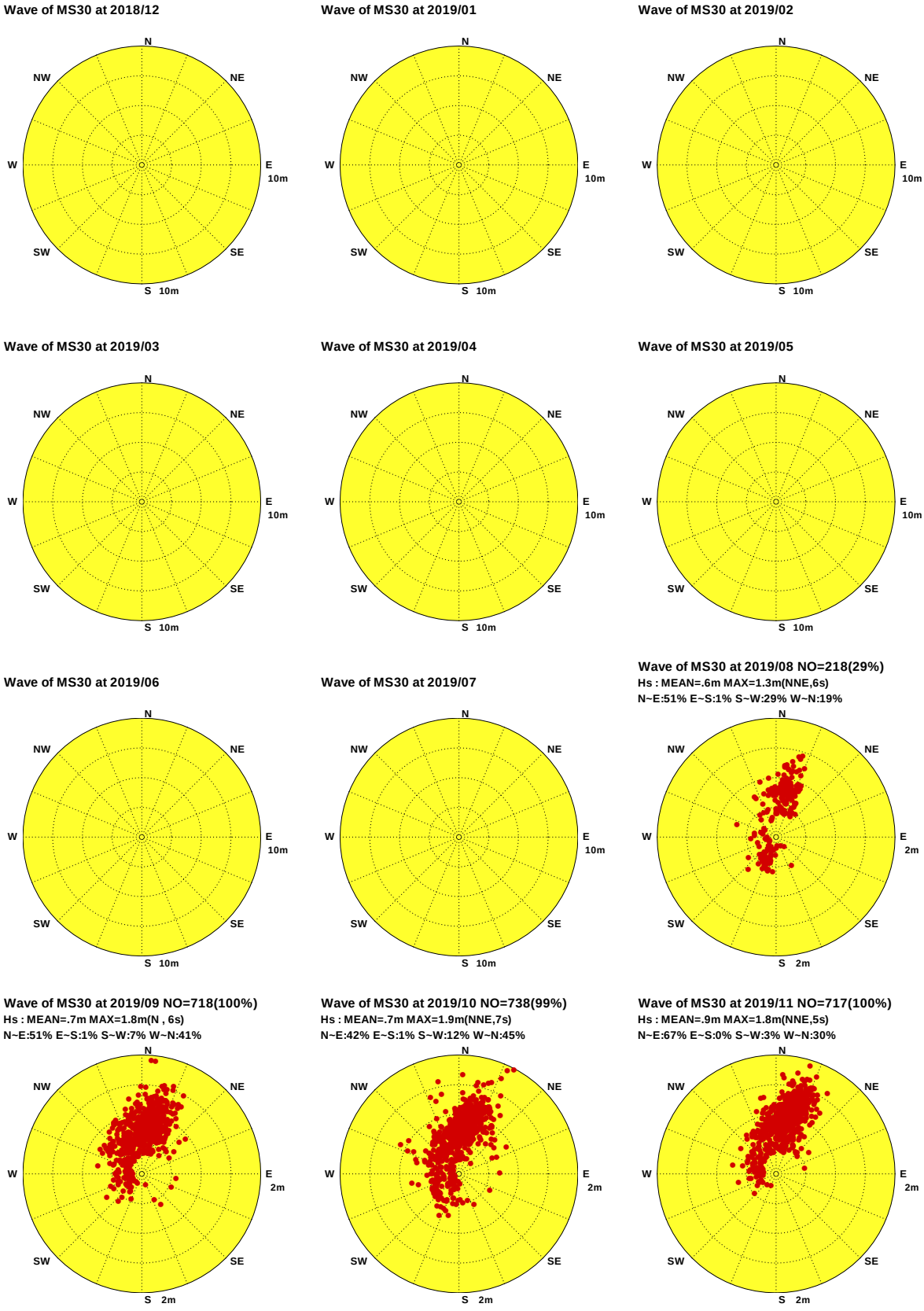


圖2.5.6 2019年馬祖海域每月 3站修補前觀測波高向量分佈圖

V18CMS30.1H0 V191MS30.1H0 V192MS30.1H0 V193MS30.1H0 V194MS30.1H0 V195MS30.1H0
V196MS30.1H0 V197MS30.1H0 V198MS30.1H0 V199MS30.1H0 V19AMS30.1H0 V19BMS30.1H0

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第三章　2019 年馬祖海域觀測潮汐資料年報

2019 年馬祖海域潮汐之觀測包括**測站 T**、**測站 S**、**測站 G**、**測站 L**、**測站 M**、**測站 X**、**測站 A**、**測站 2**、**測站 3** 及**測站 4** 等 10 個測站(測站位置如第 O 章圖 TU1，各測站歷年觀測潮汐資料蒐集概況如表 TU1)。**測站 T** 與其他 9 個測站特性皆相近。本年報取經檢核及補遺之**測站 T** 資料作為主要測站 1，**測站 G** 資料作為主要測站 2，**測站 L** 資料作為主要測站 3。

3.1　2019 年馬祖海域觀測潮汐資料年報圖表

本章第 1 節**潮汐**年報**資料處理之圖表包括:**

1. 表 3.1.1a　2019 年**各觀測站**每月**觀測潮汐**資料**修補前**記錄表。
2. 表 3.1.1b 2019 年**主要測站**每月**觀測潮汐**資料**修補後**記錄表。
3. 表 3.1.2　2019 年**主要測站 1 修補後**每月(季)及整年觀測潮位、潮差及週期重要統計量統計表。
4. 表 3.1.3　2019 年**主要測站 2 修補後**每月(季)及整年觀測潮位、潮差及週期重要統計量統計表。
5. 表 3.1.4　2019 年**主要測站 3 修補後**每月(季)及整年觀測潮位、潮差及週期重要統計量統計表。
6. 圖 3.1.1 2019 年**主要測站 1 修補前後**每月觀測潮位歷線比較圖。
7. 圖 3.1.2 2019 年**主要測站 1 修補後**每月觀測潮位及計算天文潮位歷線比較圖。
8. 圖 3.1.3 2019 年**主要測站 2 修補前後**每月觀測潮位歷線比較圖。

9. 圖 3.1.4 2019 年**主要測站 2 修補後**每月觀測潮位及計算天文潮位歷線比較圖。
10. 圖 3.1.5 2019 年**主要測站 3 修補前後**每月觀測潮位歷線比較圖。
11. 圖 3.1.6　2019 年**主要測站 3 修補後**每月觀測潮位及計算天文潮位歷線比較圖。

第 2 節潮汐年報資料處理之圖表包括: 2019 年馬祖海域**各測站修補前**每月(季)及整年潮位、潮差及週期重要統計量統計表。

第 3 節潮汐年報資料處理之統計圖包括: 2019 年馬祖海域**主要測站 1 修補後**與**其他測站(修補前)**每月觀測潮位歷線比較圖。

第 4 節潮汐年報資料處理之統計圖包括: 2019 年馬祖海域**主要測站 2 修補後**與**其他測站(修補前)**每月觀測潮位歷線比較圖。

第 5 節潮汐年報資料處理之統計圖包括: 2019 年馬祖海域**主要測站 3 修補後**與**其他測站(修補前)**每月觀測潮位歷線比較圖。

表3.1.1a 2019年每月馬祖海域修補前各測站觀測潮汐資料紀錄表

海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域
年月/測站	T	G	L	S	M	X	A	2	3	4		
2018/12 月	744(100%)	743(99.9%)	744(100%)	744(100%)	743(99.9%)	733(98.5%)	742(99.7%)	739(99.3%)	*	*	*	*
2019/ 1 月	744(100%)	743(99.9%)	744(100%)	498(66.9%)	205(27.6%)	737(99.1%)	732(98.4%)	10(1.3%)	*	*	*	*
2019/ 2 月	672(100%)	672(100%)	672(100%)	135(20.1%)	111(16.5%)	408(60.7%)	639(95.1%)	182(27.1%)	*	*	*	*
2019/ 3 月	744(100%)	285(38.3%)	744(100%)	744(100%)	221(29.7%)	728(97.8%)	743(99.9%)	740(99.5%)	*	*	*	*
2019/ 4 月	720(100%)	207(28.8%)	720(100%)	720(100%)	211(29.3%)	639(88.8%)	372(51.7%)	711(98.8%)	*	*	*	*
2019/ 5 月	737(99.1%)	198(26.6%)	730(98.1%)	730(98.1%)	*	741(99.6%)	*	741(99.6%)	*	*	*	*
2019/ 6 月	720(100%)	644(89.4%)	720(100%)	720(100%)	*	707(98.2%)	*	719(99.9%)	*	*	*	*
2019/ 7 月	744(100%)	744(100%)	744(100%)	744(100%)	*	738(99.2%)	*	744(100%)	*	*	*	*
2019/ 8 月	744(100%)	743(99.9%)	744(100%)	744(100%)	*	617(82.9%)	53(7.1%)	694(93.3%)	218(29.3%)	102(13.7%)	*	*
2019/ 9 月	720(100%)	720(100%)	720(100%)	720(100%)	*	705(97.9%)	684(95.0%)	717(99.6%)	719(99.9%)	720(100%)	*	*
2019/10 月	744(100%)	744(100%)	744(100%)	744(100%)	*	736(98.9%)	735(98.8%)	678(91.1%)	738(99.2%)	741(99.6%)	*	*
2019/11 月	720(100%)	612(85.0%)	160(22.2%)	720(100%)	*	714(99.2%)	716(99.4%)	696(96.7%)	718(99.7%)	719(99.9%)	*	*
2019/冬季	2160(100%)	2158(99.9%)	2160(100%)	1377(63.8%)	1059(49.0%)	1878(86.9%)	2113(97.8%)	931(43.1%)	*	*	*	*
2019/春季	2201(99.7%)	690(31.3%)	2194(99.4%)	2194(99.4%)	432(19.6%)	2108(95.5%)	1115(50.5%)	2192(99.3%)	*	*	*	*
2019/夏季	2208(100%)	2131(96.5%)	2208(100%)	2208(100%)	*	2062(93.4%)	53(2.4%)	2157(97.7%)	218(9.9%)	102(4.6%)	*	*
2019/秋季	2184(100%)	2076(95.1%)	1624(74.4%)	2184(100%)	*	2155(98.7%)	2135(97.8%)	2091(95.7%)	2175(99.6%)	2180(99.8%)	*	*
2019/整年	8753(99.9%)	7055(80.5%)	8186(93.4%)	7963(90.9%)	1491(17.0%)	8203(93.6%)	5416(61.8%)	7371(84.1%)	2393(27.3%)	2282(26.1%)	*	*
起始年月	2018/12	2018/12	2018/12	2018/12	2018/12	2018/12	2018/12	2018/12	2019/08	2019/08	*	*
結束年月	2019/11	2019/11	2019/11	2019/11	2019/04	2019/11	2019/11	2019/11	2019/11	2019/11	*	*

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表3.1.1b 2019年每月馬祖海域修補後各測站潮汐資料紀錄表

海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域
年月/測站	T	G	L									
2018/12 月	744(100%)	744(100%)	744(100%)	*	*	*	*	*	*	*	*	*
2019/ 1 月	744(100%)	744(100%)	744(100%)	*	*	*	*	*	*	*	*	*
2019/ 2 月	672(100%)	672(100%)	672(100%)	*	*	*	*	*	*	*	*	*
2019/ 3 月	744(100%)	744(100%)	744(100%)	*	*	*	*	*	*	*	*	*
2019/ 4 月	720(100%)	720(100%)	720(100%)	*	*	*	*	*	*	*	*	*
2019/ 5 月	744(100%)	744(100%)	744(100%)	*	*	*	*	*	*	*	*	*
2019/ 6 月	720(100%)	720(100%)	720(100%)	*	*	*	*	*	*	*	*	*
2019/ 7 月	744(100%)	744(100%)	744(100%)	*	*	*	*	*	*	*	*	*
2019/ 8 月	744(100%)	744(100%)	744(100%)	*	*	*	*	*	*	*	*	*
2019/ 9 月	720(100%)	720(100%)	720(100%)	*	*	*	*	*	*	*	*	*
2019/10 月	744(100%)	744(100%)	744(100%)	*	*	*	*	*	*	*	*	*
2019/11 月	720(100%)	720(100%)	720(100%)	*	*	*	*	*	*	*	*	*
2019/冬季	2160(100%)	2160(100%)	2160(100%)	*	*	*	*	*	*	*	*	*
2019/春季	2208(100%)	2208(100%)	2208(100%)	*	*	*	*	*	*	*	*	*
2019/夏季	2208(100%)	2208(100%)	2208(100%)	*	*	*	*	*	*	*	*	*
2019/秋季	2184(100%)	2184(100%)	2184(100%)	*	*	*	*	*	*	*	*	*
2019/整年	8760(100%)	8760(100%)	8760(100%)	*	*	*	*	*	*	*	*	*
起始年月	2018/12	2018/12	2018/12	*	*	*	*	*	*	*	*	*
結束年月	2019/11	2019/11	2019/11	*	*	*	*	*	*	*	*	*

表3.1.2　2019年馬祖海域主要測站1修補後潮差週期及潮位重要統計量統計表

序號	日期(年/月)	測站	平均潮差(公分)	最大潮差(公分)	1/3潮差(公分)	1/10潮差(公分)	平均週期(時)	最大週期(時)	1/3週期(時)	1/10週期(時)	潮差個數(個)	平均潮位(公分)	最高潮位(公分)	最低潮位(公分)	水位點數(個)(%)	平均高潮位(公分)	大潮平均高潮位(公分)	平均低潮位(公分)	大潮平均低潮位(公分)
1	2018/12	T	454	637	552	617	12.4	13.0	13.0	13.0	59	545	856	177	744(100)	766	809	312	287
2	2019/01	T	454	659	563	637	12.4	13.0	13.0	13.0	59	530	841	140	744(100)	752	802	299	263
3	2019/02	T	448	667	567	643	12.4	13.0	13.0	13.0	53	514	822	142	672(100)	733	758	289	265
4	2019/03	T	426	617	545	601	12.4	13.0	13.0	13.0	59	512	860	167	744(100)	722	768	296	251
5	2019/04	T	429	605	536	584	12.4	13.0	13.0	13.0	57	511	809	200	720(100)	723	771	296	242
6	2019/05	T	428	594	531	578	12.4	13.0	13.0	13.0	59	516	806	206	744(100)	729	770	301	258
7	2019/06	T	425	589	525	572	12.4	13.0	13.0	13.0	57	517	787	193	720(100)	729	754	303	275
8	2019/07	T	438	641	546	620	12.4	13.0	13.0	13.0	59	513	807	162	744(100)	733	760	292	278
9	2019/08	T	452	667	567	653	12.4	13.0	13.0	13.0	59	523	845	161	744(100)	748	770	294	277
10	2019/09	T	453	661	568	635	12.4	13.0	13.0	13.0	57	537	859	176	720(100)	760	783	306	273
11	2019/10	T	453	633	566	616	12.4	13.0	13.0	13.0	59	537	837	192	744(100)	759	791	307	276
12	2019/11	T	439	647	556	612	12.4	13.0	13.0	13.0	57	529	842	171	720(100)	745	776	306	275
13	2019/冬	T	451	659	556	619	12.4	14.0	13.0	13.1	173	530	856	140	2160(100)	751	789	301	272
14	2019/春	T	427	617	530	578	12.4	14.0	13.1	13.2	177	513	860	167	2208(100)	725	770	298	250
15	2019/夏	T	440	667	548	615	12.4	13.0	13.0	13.0	177	518	845	161	2208(100)	737	763	296	275
16	2019/秋	T	449	661	565	622	12.4	13.0	13.0	13.0	175	535	859	171	2184(100)	755	783	306	275
17	2019/年	T	442	659	544	601	12.4	14.0	13.1	13.2	704	524	860	140	8760(100)	742	776	300	268

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表3.1.3　2019年馬祖海域主要測站2修補後潮差週期及潮位重要統計量統計表

序號	日期(年/月)	測站	平均潮差(公分)	最大潮差(公分)	1/3潮差(公分)	1/10潮差(公分)	平均週期(時)	最大週期(時)	1/3週期(時)	1/10週期(時)	潮差個數(個)	平均潮位(公分)	最高潮位(公分)	最低潮位(公分)	水位點數(個)(%)	平均高潮位(公分)	大潮平均高潮位(公分)	平均低潮位(公分)	大潮平均低潮位(公分)
1	2018/12	G	446	632	543	608	12.4	13.0	13.0	13.0	59	419	722	50	744(100)	637	679	191	167
2	2019/01	G	446	656	554	629	12.4	13.0	13.0	13.0	59	404	710	20	744(100)	624	671	178	142
3	2019/02	G	440	659	555	627	12.4	13.0	13.0	13.0	53	392	695	35	672(100)	608	631	172	148
4	2019/03	G	384	518	489	511	12.4	14.0	13.1	13.4	59	372	646	62	744(100)	563	612	180	141
5	2019/04	G	376	534	465	513	12.4	14.0	13.1	13.2	57	400	665	107	720(100)	587	626	213	176
6	2019/05	G	379	551	481	529	12.4	13.0	13.0	13.0	59	414	679	111	744(100)	604	635	225	167
7	2019/06	G	412	584	509	561	12.4	13.0	13.0	13.0	57	406	688	89	720(100)	612	633	198	177
8	2019/07	G	428	622	532	602	12.4	13.0	13.0	13.0	59	401	686	64	744(100)	616	642	185	169
9	2019/08	G	444	652	556	637	12.4	13.0	13.0	13.0	59	412	723	58	744(100)	633	654	187	172
10	2019/09	G	445	649	557	623	12.4	13.0	13.0	13.0	57	427	741	69	720(100)	646	668	200	167
11	2019/10	G	445	626	556	603	12.4	13.0	13.0	13.0	59	429	735	100	744(100)	648	681	203	175
12	2019/11	G	432	632	544	603	12.4	14.0	13.1	13.4	57	462	773	118	720(100)	674	707	243	216
13	2019/冬	G	443	656	546	609	12.4	14.0	13.0	13.1	173	406	722	20	2160(100)	623	660	181	152
14	2019/春	G	378	534	475	508	12.4	14.0	13.1	13.2	177	395	679	62	2208(100)	585	624	206	161
15	2019/夏	G	429	652	536	601	12.4	13.0	13.0	13.0	177	406	723	58	2208(100)	620	645	190	170
16	2019/秋	G	442	649	554	609	12.4	14.0	13.0	13.1	175	439	773	69	2184(100)	657	685	215	186
17	2019/年	G	423	656	524	585	12.4	14.0	13.1	13.2	704	412	773	20	8760(100)	621	653	198	168

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表3.1.4　2019年馬祖海域主要測站3修補後潮差週期及潮位重要統計量統計表

序號	日期(年/月)	測站	平均潮差(公分)	最大潮差(公分)	1/3潮差(公分)	1/10潮差(公分)	平均週期(時)	最大週期(時)	1/3週期(時)	1/10週期(時)	潮差個數(個)	平均潮位(公分)	最高潮位(公分)	最低潮位(公分)	水位點數(個)(%)	平均高潮位(公分)	大潮平均高潮位(公分)	平均低潮位(公分)	大潮平均低潮位(公分)
1	2018/12	L	386	548	473	531	12.4	13.0	13.0	13.0	59	383	655	65	744(100)	572	609	187	165
2	2019/01	L	384	574	481	550	12.4	14.0	13.1	13.2	59	369	634	33	744(100)	559	600	175	143
3	2019/02	L	382	579	486	553	12.4	13.0	13.0	13.0	53	357	628	46	672(100)	546	570	168	147
4	2019/03	L	361	518	464	511	12.4	14.0	13.1	13.4	59	365	653	69	744(100)	544	585	184	145
5	2019/04	L	363	513	457	499	12.4	14.0	13.1	13.2	57	375	638	115	720(100)	556	599	195	148
6	2019/05	L	363	508	455	495	12.4	13.0	13.0	13.0	59	388	644	123	744(100)	570	608	207	172
7	2019/06	L	359	503	450	492	12.4	13.0	13.0	13.0	57	399	628	117	720(100)	580	598	220	191
8	2019/07	L	369	552	466	531	12.4	13.0	13.0	13.0	59	405	653	101	744(100)	591	613	220	207
9	2019/08	L	382	575	483	558	12.4	13.0	13.0	13.0	59	415	682	102	744(100)	606	626	222	208
10	2019/09	L	383	558	485	540	12.4	13.0	13.0	13.0	57	420	695	114	720(100)	610	632	226	198
11	2019/10	L	383	552	483	528	12.4	13.0	13.0	13.0	59	416	670	116	744(100)	607	635	223	197
12	2019/11	L	421	631	542	603	12.4	14.0	13.1	13.2	57	448	782	125	720(100)	655	696	235	205
13	2019/冬	L	383	574	475	533	12.4	14.0	13.0	13.1	173	370	655	33	2160(100)	560	593	177	151
14	2019/春	L	361	518	451	493	12.4	14.0	13.1	13.2	177	376	653	69	2208(100)	557	597	195	155
15	2019/夏	L	371	575	468	526	12.4	13.0	13.0	13.0	177	406	682	101	2208(100)	593	614	221	201
16	2019/秋	L	396	631	508	563	12.4	14.0	13.0	13.1	175	428	782	114	2184(100)	624	654	228	200
17	2019/年	L	378	598	471	526	12.4	14.0	13.0	13.1	704	395	782	33	8760(100)	583	615	205	178

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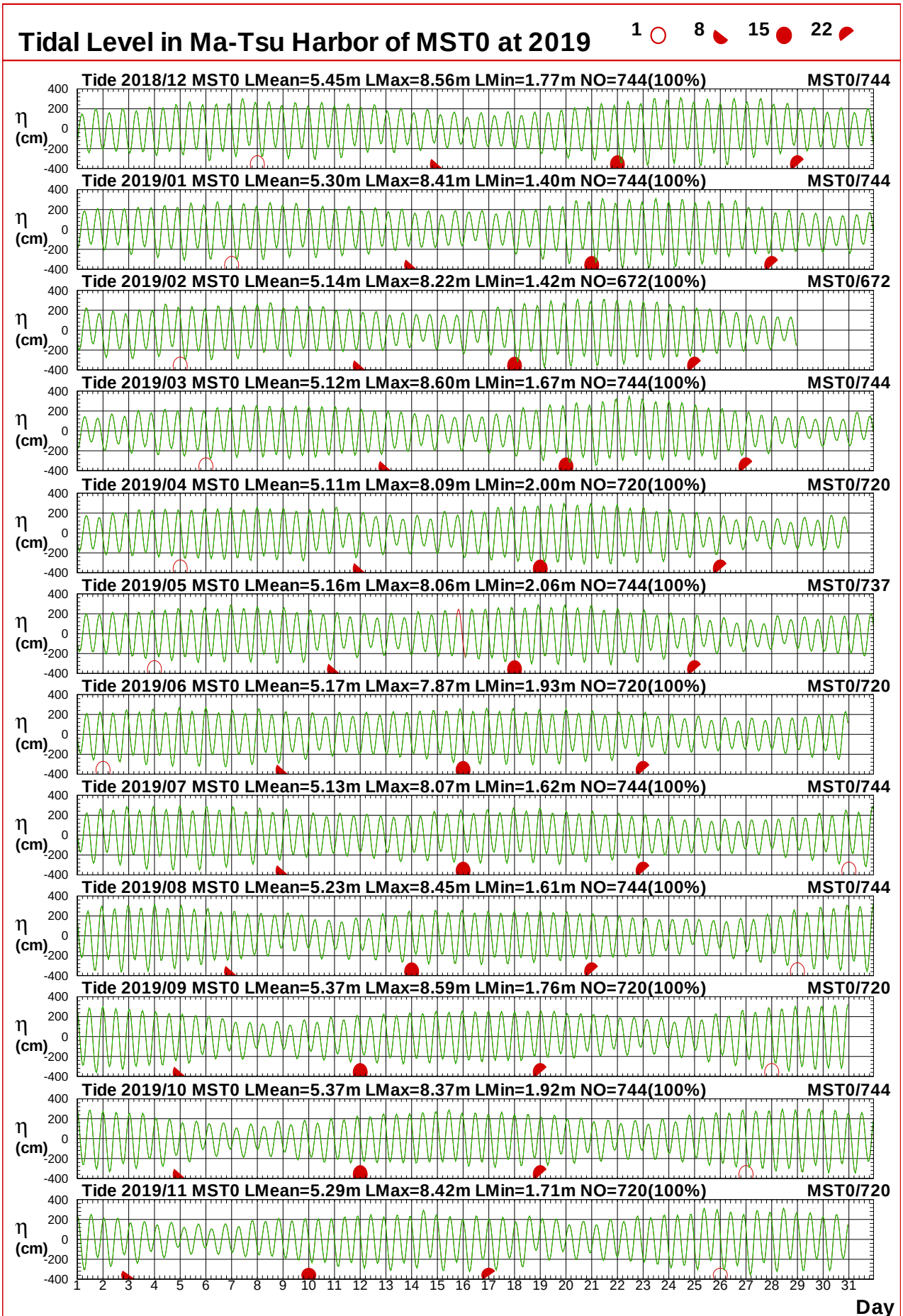


圖3.1.1　2019年每月馬祖海域 T 站修補前後之潮位比較圖

T18CMST0.1HA T18CMST0.1H0 T191MST0.1HA T191MST0.1H0 T192MST0.1HA T192MST0.1H0
T193MST0.1HA T193MST0.1H0 T194MST0.1HA T194MST0.1H0 T195MST0.1HA T195MST0.1H0

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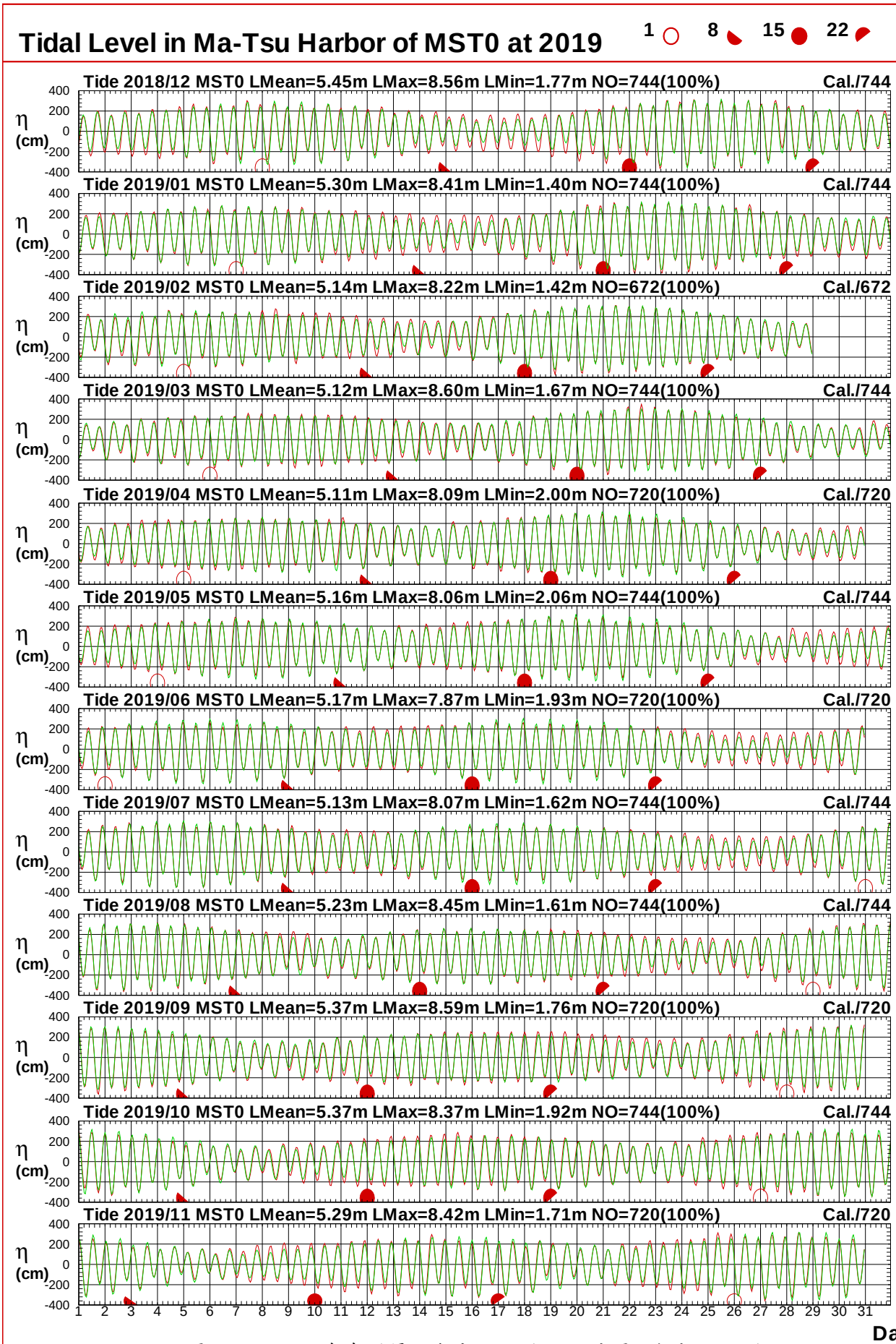


圖3.1.2　2019年每月馬祖海域 T 站潮位歷線圖 (綠線: 天文潮)

T18CMST0.1HA T18CMST0.1HC T191MST0.1HA T191MST0.1HC T192MST0.1HA T192MST0.1HC
T193MST0.1HA T193MST0.1HC T194MST0.1HA T194MST0.1HC T195MST0.1HA T195MST0.1HC

Institute of Harbor & Marine Technology

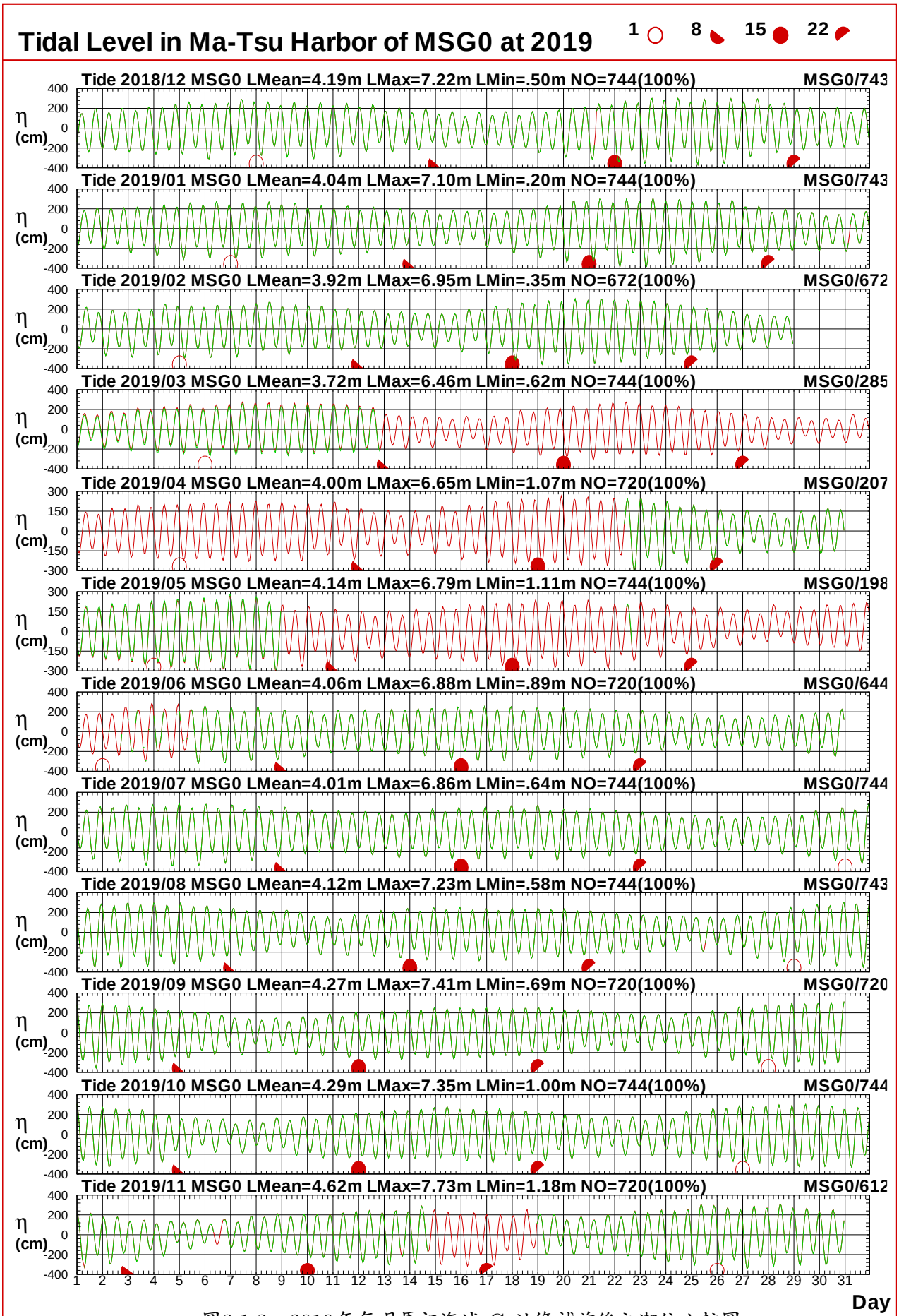


圖3.1.3　2019年每月馬祖海域 G 站修補前後之潮位比較圖

T18CMSG0.1HA T18CMSG0.1H0 T191MSG0.1HA T191MSG0.1H0 T192MSG0.1HA T192MSG0.1H0
T193MSG0.1HA T193MSG0.1H0 T194MSG0.1HA T194MSG0.1H0 T195MSG0.1HA T195MSG0.1H0

Institute of Harbor & Marine Technology

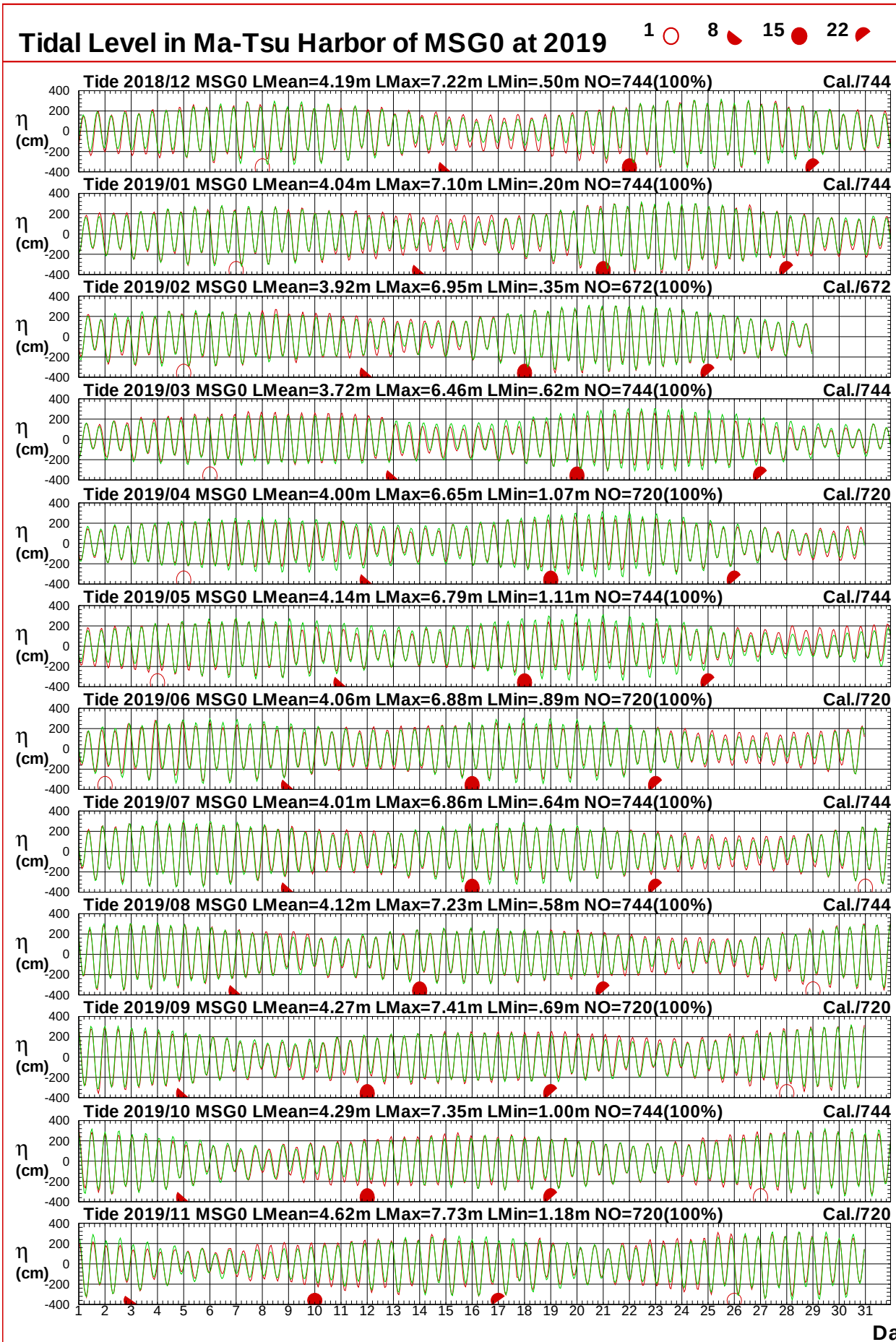


圖3.1.4　2019年每月馬祖海域 G 站潮位歷線圖 (綠線: 天文潮)

T18CMSG0.1HA T18CMST0.1HC T191MSG0.1HA T191MST0.1HC T192MSG0.1HA T192MST0.1HC
T193MSG0.1HA T193MST0.1HC T194MSG0.1HA T194MST0.1HC T195MSG0.1HA T195MST0.1HC

Institute of Harbor & Marine Technology

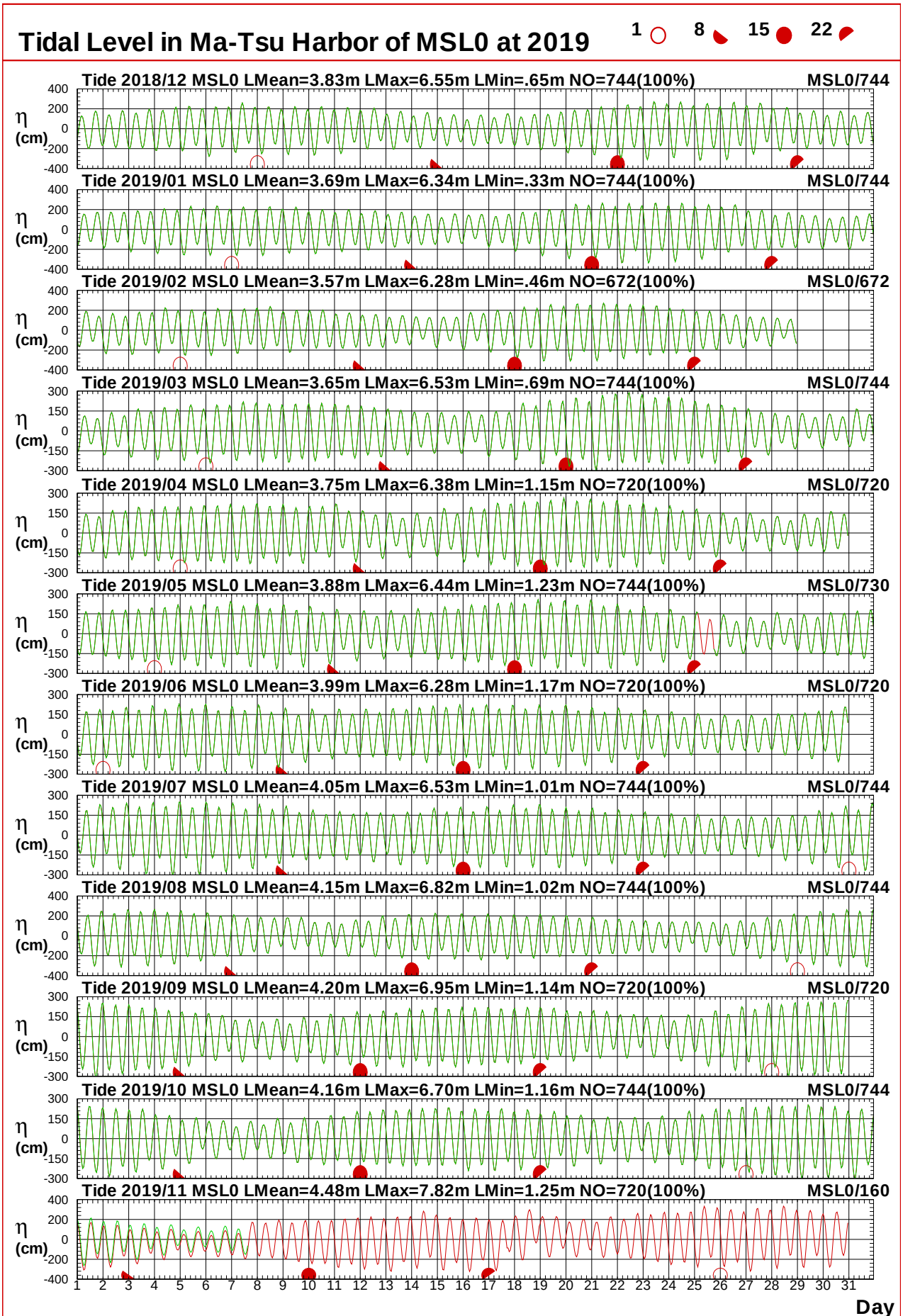


圖3.1.5　2019年每月馬祖海域 L 站修補前後之潮位比較圖

T18CMSL0.1HA T18CMSL0.1H0 T191MSL0.1HA T191MSL0.1H0 T192MSL0.1HA T192MSL0.1H0
T193MSL0.1HA T193MSL0.1H0 T194MSL0.1HA T194MSL0.1H0 T195MSL0.1HA T195MSL0.1H0

Institute of Harbor & Marine Technology

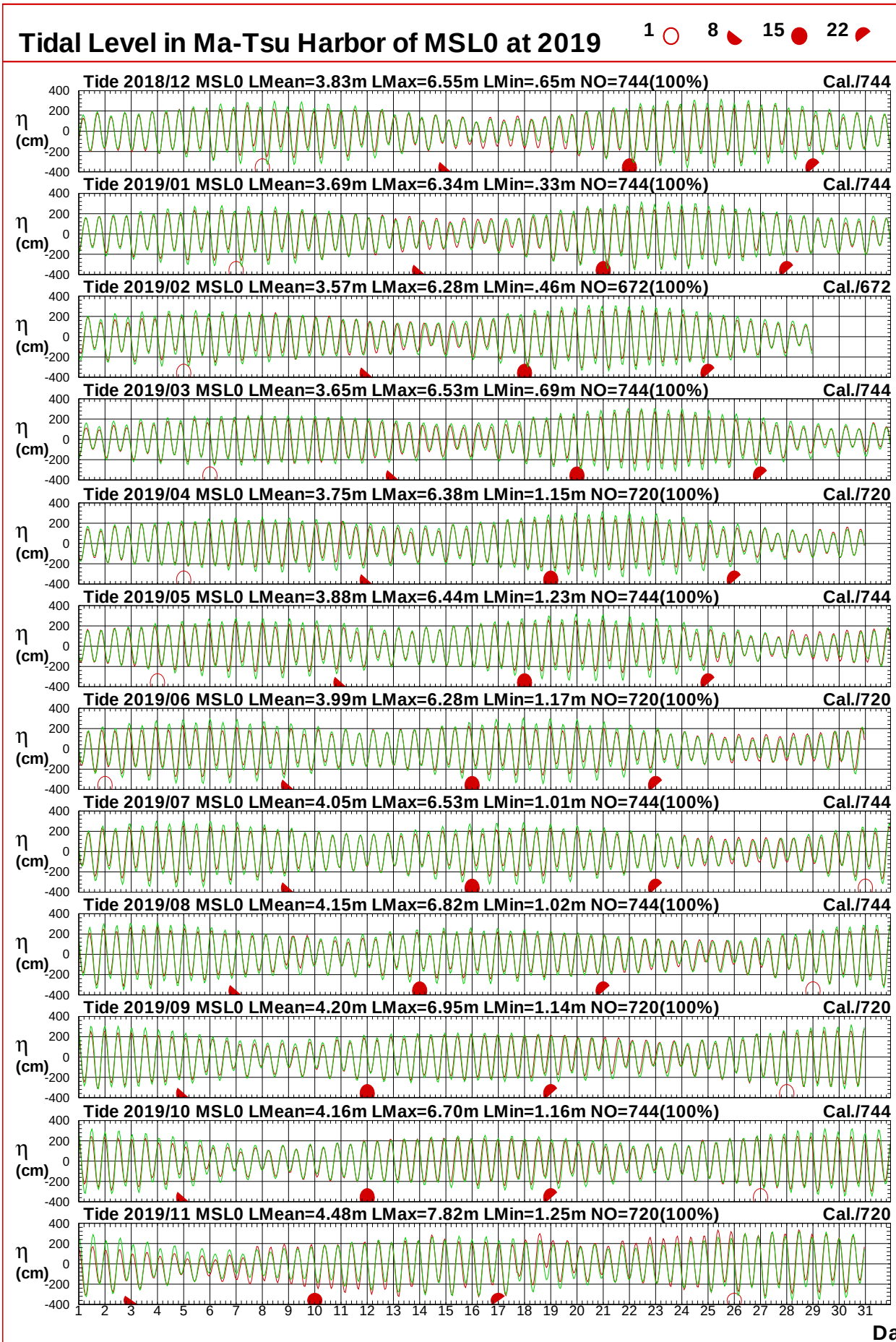


圖3.1.6　2019年每月馬祖海域 L 站潮位歷線圖 (綠線: 天文潮)

T18CMSL0.1HA T18CMST0.1HC T191MSL0.1HA T191MST0.1HC T192MSL0.1HA T192MST0.1HC
T193MSL0.1HA T193MST0.1HC T194MSL0.1HA T194MST0.1HC T195MSL0.1HA T195MST0.1HC

Institute of Harbor & Marine Technology

3.2　2019 年馬祖海域各測站修補前

潮汐統計量統計表

表3.2.1　2019年馬祖海域 T 站修補前潮差週期及潮位重要統計量統計表

序號	日期 (年/月)	測站	平均潮差 (公分)	最大潮差 (公分)	1/3 潮差 (公分)	1/10 潮差 (公分)	平均週期 (時)	最大週期 (時)	1/3 週期 (時)	1/10 週期 (時)	潮差個數 (個)	平均潮位 (公分)	最高潮位 (公分)	最低潮位 (公分)	水位點數 (個)(%)	平均高潮位 (公分)	大潮平均高潮位 (公分)	平均低潮位 (公分)	大潮平均低潮位 (公分)
1	2018/12	T	454	637	552	617	12.4	13.0	13.0	13.0	59	545	856	177	744(100)	766	809	312	287
2	2019/01	T	454	659	563	637	12.4	13.0	13.0	13.0	59	530	841	140	744(100)	752	802	299	263
3	2019/02	T	448	667	567	643	12.4	13.0	13.0	13.0	53	514	822	142	672(100)	733	758	289	265
4	2019/03	T	426	617	545	601	12.4	13.0	13.0	13.0	59	512	860	167	744(100)	722	768	296	251
5	2019/04	T	429	605	536	584	12.4	13.0	13.0	13.0	57	511	809	200	720(100)	723	771	296	242
6	2019/05	T	427	594	531	578	12.6	25.0	13.6	15.4	58	516	806	206	737(99)	728	770	301	258
7	2019/06	T	425	589	525	572	12.4	13.0	13.0	13.0	57	517	787	193	720(100)	729	754	303	275
8	2019/07	T	438	641	546	620	12.4	13.0	13.0	13.0	59	513	807	162	744(100)	733	760	292	278
9	2019/08	T	452	667	567	653	12.4	13.0	13.0	13.0	59	523	845	161	744(100)	748	770	294	277
10	2019/09	T	453	661	568	635	12.4	13.0	13.0	13.0	57	537	859	176	720(100)	760	783	306	273
11	2019/10	T	453	633	566	616	12.4	13.0	13.0	13.0	59	537	837	192	744(100)	759	791	307	276
12	2019/11	T	439	647	556	612	12.4	13.0	13.0	13.0	57	529	842	171	720(100)	745	776	306	275
13	2019/冬	T	451	659	556	619	12.4	14.0	13.0	13.1	173	530	856	140	2160(100)	751	789	301	272
14	2019/春	T	426	617	531	578	12.5	25.0	13.3	13.9	176	513	860	167	2201(100)	724	770	298	250
15	2019/夏	T	440	667	548	615	12.4	13.0	13.0	13.0	177	518	845	161	2208(100)	737	763	296	275
16	2019/秋	T	449	661	565	622	12.4	13.0	13.0	13.0	175	535	859	171	2184(100)	755	783	306	275
17	2019/年	T	442	659	544	601	12.4	25.0	13.1	13.3	703	524	860	140	8753(100)	742	776	300	268

DIST3B.BAT　測站編號:MST

港灣技術研究中心

表3.2.2　2019年馬祖海域 G 站修補前潮差週期及潮位重要統計量統計表

序號	日期(年/月)	測站	平均潮差(公分)	最大潮差(公分)	1/3潮差(公分)	1/10潮差(公分)	平均週期(時)	最大週期(時)	1/3週期(時)	1/10週期(時)	潮差個數(個)	平均潮位(公分)	最高潮位(公分)	最低潮位(公分)	水位點數(個)(%)	平均高潮位(公分)	大潮平均高潮位(公分)	平均低潮位(公分)	大潮平均低潮位(公分)
1	2018/12	G	446	632	543	608	12.4	13.0	13.0	13.0	59	419	722	50	743(100)	637	679	191	167
2	2019/01	G	446	656	554	629	12.4	13.0	13.0	13.0	59	404	710	20	743(100)	624	671	178	142
3	2019/02	G	440	659	555	627	12.4	13.0	13.0	13.0	53	392	695	35	672(100)	608	631	172	148
4	2019/03	G	426	498	487	497	12.3	13.0	12.9	13.0	22	389	646	123	285(38)	601	623	176	162
5	2019/04	G	344	534	457	534	12.5	13.0	13.0	13.0	16	400	641	107	207(29)	568	0	224	0
6	2019/05	G	456	551	523	551	12.3	13.0	13.0	13.0	15	404	679	111	198(27)	631	636	172	158
7	2019/06	G	407	577	503	555	12.4	13.0	13.0	13.0	48	406	666	89	644(89)	609	644	200	165
8	2019/07	G	428	622	532	602	12.4	13.0	13.0	13.0	59	401	686	64	744(100)	616	642	185	169
9	2019/08	G	443	652	550	631	12.6	26.0	13.7	15.6	58	412	723	58	743(100)	633	654	187	172
10	2019/09	G	445	649	557	623	12.4	13.0	13.0	13.0	57	427	741	69	720(100)	646	668	200	167
11	2019/10	G	445	626	556	603	12.4	13.0	13.0	13.0	59	429	735	100	744(100)	648	681	203	175
12	2019/11	G	425	653	539	612	13.0	26.0	14.8	19.3	44	465	773	118	612(85)	673	707	245	216
13	2019/冬	G	443	656	546	609	12.4	14.0	13.0	13.1	173	406	722	20	2158(100)	623	660	181	152
14	2019/春	G	406	555	491	526	12.3	13.0	13.0	13.0	52	397	679	107	690(31)	599	629	189	160
15	2019/夏	G	428	652	535	597	12.5	26.0	13.2	13.8	167	406	723	58	2131(97)	620	649	190	167
16	2019/秋	G	440	653	552	611	12.6	25.0	13.7	15.3	162	439	773	69	2076(95)	655	685	214	186
17	2019/年	G	434	656	537	599	12.5	26.0	13.3	14.0	556	415	773	20	7055(81)	630	661	194	168

DIST3B.BAT　測站編號:MSG

港灣技術研究中心

表3.2.3　2019年馬祖海域 L 站修補前潮差週期及潮位重要統計量統計表

序號	日期 (年/月)	測站	平均潮差 (公分)	最大潮差 (公分)	1/3 潮差 (公分)	1/10 潮差 (公分)	平均週期 (時)	最大週期 (時)	1/3 週期 (時)	1/10 週期 (時)	潮差個數 (個)	平均潮位 (公分)	最高潮位 (公分)	最低潮位 (公分)	水位點數 (個)(%)	平均高潮位 (公分)	大潮平均高潮位 (公分)	平均低潮位 (公分)	大潮平均低潮位 (公分)
1	2018/12	L	386	548	473	531	12.4	13.0	13.0	13.0	59	383	655	65	744(100)	572	609	187	165
2	2019/01	L	384	574	481	550	12.4	14.0	13.1	13.2	59	369	634	33	744(100)	559	600	175	143
3	2019/02	L	382	579	486	553	12.4	13.0	13.0	13.0	53	357	628	46	672(100)	546	570	168	147
4	2019/03	L	361	518	464	511	12.4	14.0	13.1	13.4	59	365	653	69	744(100)	544	585	184	145
5	2019/04	L	363	513	457	499	12.4	14.0	13.1	13.2	57	375	638	115	720(100)	556	599	195	148
6	2019/05	L	365	508	455	495	12.6	25.0	13.6	15.4	58	388	644	123	730(98)	571	608	207	172
7	2019/06	L	359	503	450	492	12.4	13.0	13.0	13.0	57	399	628	117	720(100)	580	598	220	191
8	2019/07	L	369	552	466	531	12.4	13.0	13.0	13.0	59	405	653	101	744(100)	591	613	220	207
9	2019/08	L	382	575	483	558	12.4	13.0	13.0	13.0	59	415	682	102	744(100)	606	626	222	208
10	2019/09	L	383	558	485	540	12.4	13.0	13.0	13.0	57	420	695	114	720(100)	610	632	226	198
11	2019/10	L	383	552	483	528	12.4	13.0	13.0	13.0	59	416	670	116	744(100)	607	635	223	197
12	2019/11	L	284	478	394	478	12.6	14.0	13.3	14.0	12	403	618	140	160(22)	543	0	259	0
13	2019/冬	L	383	574	475	533	12.4	14.0	13.0	13.1	173	370	655	33	2160(100)	560	593	177	151
14	2019/春	L	362	518	451	493	12.5	25.0	13.3	13.9	176	376	653	69	2194(99)	557	597	195	155
15	2019/夏	L	371	575	468	526	12.4	13.0	13.0	13.0	177	406	682	101	2208(100)	593	614	221	201
16	2019/秋	L	375	558	482	533	12.4	14.0	13.0	13.1	130	416	695	114	1624(74)	603	633	228	197
17	2019/年	L	373	574	462	515	12.4	25.0	13.1	13.3	658	391	695	33	8186(93)	577	607	204	175

DIST3B.BAT　　測站編號:MSL

港灣技術研究中心

表3.2.4　2019年馬祖海域 S 站修補前潮差週期及潮位重要統計量統計表

序號	日期(年/月)	測站	平均潮差(公分)	最大潮差(公分)	1/3潮差(公分)	1/10潮差(公分)	平均週期(時)	最大週期(時)	1/3週期(時)	1/10週期(時)	潮差個數(個)	平均潮位(公分)	最高潮位(公分)	最低潮位(公分)	水位點數(個)(%)	平均高潮位(公分)	大潮平均高潮位(公分)	平均低潮位(公分)	大潮平均低潮位(公分)
1	2018/12	S	452	634	548	616	12.4	13.0	13.0	13.0	59	571	882	194	744(100)	792	837	340	317
2	2019/01	S	434	612	518	572	12.4	13.0	13.0	13.0	39	556	860	205	498(67)	771	818	335	298
3	2019/02	S	402	538	518	538	12.5	13.0	13.0	13.0	10	501	779	241	135(20)	693	0	297	0
4	2019/03	S	423	605	542	592	12.4	14.0	13.1	13.2	59	500	850	143	744(100)	708	751	286	234
5	2019/04	S	427	634	541	595	12.4	13.0	13.0	13.0	57	500	797	160	720(100)	712	753	287	223
6	2019/05	S	430	630	535	588	12.6	25.0	13.7	15.6	58	509	803	167	730(98)	723	761	293	248
7	2019/06	S	424	625	535	591	12.4	13.0	13.0	13.0	57	508	780	155	720(100)	720	748	294	267
8	2019/07	S	437	640	556	619	12.4	13.0	13.0	13.0	59	508	806	164	744(100)	728	758	287	269
9	2019/08	S	452	692	578	674	12.4	13.0	13.0	13.0	59	518	846	137	744(100)	744	768	290	269
10	2019/09	S	451	668	571	640	12.4	13.0	13.0	13.0	57	535	847	172	720(100)	757	781	305	268
11	2019/10	S	449	618	559	605	12.4	13.0	13.0	13.0	59	535	832	201	744(100)	756	789	307	275
12	2019/11	S	437	641	548	606	12.4	13.0	13.0	13.0	57	528	848	178	720(100)	742	777	306	276
13	2019/冬	S	441	634	534	591	12.4	13.0	13.0	13.0	109	559	882	194	1377(64)	775	829	335	308
14	2019/春	S	426	605	529	576	12.5	25.0	13.3	13.9	176	503	850	143	2194(99)	714	755	288	235
15	2019/夏	S	440	692	559	629	12.4	13.0	13.0	13.0	177	512	846	137	2208(100)	730	760	290	267
16	2019/秋	S	447	668	561	619	12.4	13.0	13.0	13.0	175	533	848	172	2184(100)	752	782	306	273
17	2019/年	S	438	647	538	593	12.4	25.0	13.1	13.4	639	523	882	137	7963(91)	740	775	302	267

DIST3B.BAT　　測站編號:MSS

港灣技術研究中心

表3.2.5　2019年馬祖海域 M 站修補前潮差週期及潮位重要統計量統計表

序號	日期 (年/月)	測站	平均潮差 (公分)	最大潮差 (公分)	1/3 潮差 (公分)	1/10 潮差 (公分)	平均週期 (時)	最大週期 (時)	1/3 週期 (時)	1/10 週期 (時)	潮差個數 (個)	平均潮位 (公分)	最高潮位 (公分)	最低潮位 (公分)	水位點數 (個)(%)	平均高潮位 (公分)	大潮平均高潮位 (公分)	平均低潮位 (公分)	大潮平均低潮位 (公分)
1	2018/12	M	445	644	539	626	12.7	25.0	13.6	15.4	58	513	833	149	743(100)	729	774	286	266
2	2019/01	M	449	531	516	531	12.3	13.0	13.0	13.0	15	476	736	164	205(28)	698	715	246	227
3	2019/02	M	374	477	450	0	14.0	22.0	17.5	.0	7	487	729	232	111(17)	662	0	311	0
4	2019/03	M	413	501	488	501	12.3	13.0	13.0	13.0	17	486	735	216	221(30)	691	715	276	260
5	2019/04	M	492	589	566	589	12.4	13.0	13.0	13.0	16	483	772	181	211(29)	724	759	239	207
6	2019/05	M																	
7	2019/06	M																	
8	2019/07	M																	
9	2019/08	M																	
10	2019/09	M																	
11	2019/10	M																	
12	2019/11	M																	
13	2019/冬	M	438	644	531	603	12.6	25.0	13.4	14.5	82	503	833	149	1059(49)	716	757	281	253
14	2019/春	M	451	570	537	563	12.3	13.0	13.0	13.0	33	485	772	181	432(20)	707	737	257	233
15	2019/夏	M																	
16	2019/秋	M																	
17	2019/年	M	439	644	535	592	12.5	25.0	13.3	14.1	116	498	833	149	1491(17)	713	749	274	245

DIST3B.BAT　　測站編號:MSM

港灣技術研究中心

表3.2.6　2019年馬祖海域 X 站修補前潮差週期及潮位重要統計量統計表

序號	日期 (年/月)	測站	平均潮差 (公分)	最大潮差 (公分)	1/3 潮差 (公分)	1/10 潮差 (公分)	平均週期 (時)	最大週期 (時)	1/3 週期 (時)	1/10 週期 (時)	潮差個數 (個)	平均潮位 (公分)	最高潮位 (公分)	最低潮位 (公分)	水位點數 (個)(%)	平均高潮位 (公分)	大潮平均高潮位 (公分)	平均低潮位 (公分)	大潮平均低潮位 (公分)
1	2018/12	X	451	655	547	609	13.4	25.0	15.7	22.2	52	1092	1402	721	733(99)	1311	1355	865	846
2	2019/01	X	455	695	564	644	13.1	25.0	15.0	20.2	56	1075	1383	688	737(99)	1295	1346	845	808
3	2019/02	X	447	587	534	561	12.4	13.0	13.0	13.0	31	1067	1364	761	408(61)	1288	1308	846	823
4	2019/03	X	445	656	566	624	13.1	25.0	15.1	20.2	53	1064	1419	704	728(98)	1279	1327	845	796
5	2019/04	X	421	590	523	567	12.7	24.0	13.7	15.8	48	1052	1336	716	639(89)	1261	1313	843	792
6	2019/05	X	432	573	524	555	12.6	25.0	13.6	15.4	57	1043	1337	730	741(100)	1258	1301	827	782
7	2019/06	X	433	565	529	562	13.7	25.0	16.7	25.0	49	1043	1317	714	707(98)	1256	1285	827	795
8	2019/07	X	438	647	522	600	12.6	25.0	13.6	15.4	57	1041	1336	681	738(99)	1262	1291	822	809
9	2019/08	X	466	677	572	660	13.3	26.0	15.6	22.0	42	1054	1390	687	617(83)	1288	1306	816	809
10	2019/09	X	448	642	550	608	13.9	25.0	17.2	25.0	51	1080	1395	726	705(98)	1305	1330	846	815
11	2019/10	X	458	628	565	611	13.1	26.0	15.2	20.6	53	1081	1379	736	736(99)	1306	1338	846	816
12	2019/11	X	441	636	559	609	13.1	25.0	14.9	20.0	54	1073	1395	716	714(99)	1291	1323	849	819
13	2019/冬	X	451	691	547	608	13.0	25.0	14.7	18.9	141	1080	1402	688	1878(87)	1300	1341	853	826
14	2019/春	X	430	656	536	586	12.9	25.0	14.4	17.6	160	1053	1419	704	2108(95)	1266	1313	838	790
15	2019/夏	X	440	640	541	587	13.3	26.0	15.4	20.9	150	1045	1390	681	2062(93)	1267	1296	822	803
16	2019/秋	X	452	642	563	621	13.4	26.0	15.7	22.1	160	1078	1395	716	2155(99)	1301	1330	847	817
17	2019/年	X	443	691	548	609	13.1	26.0	15.1	20.0	613	1064	1419	681	8203(94)	1284	1318	840	808

DIST3B.BAT　　測站編號:MSX

港灣技術研究中心

表3.2.7　2019年馬祖海域 A 站修補前潮差週期及潮位重要統計量統計表

序號	日期 (年/月)	測站	平均潮差 (公分)	最大潮差 (公分)	1/3 潮差 (公分)	1/10 潮差 (公分)	平均週期 (時)	最大週期 (時)	1/3 週期 (時)	1/10 週期 (時)	潮差個數 (個)	平均潮位 (公分)	最高潮位 (公分)	最低潮位 (公分)	水位點數 (個)(%)	平均高潮位 (公分)	大潮平均高潮位 (公分)	平均低潮位 (公分)	大潮平均低潮位 (公分)
1	2018/12	A	444	656	555	639	12.7	25.0	13.6	15.4	58	2108	2411	1743	742(100)	2324	2366	1882	1857
2	2019/01	A	445	648	550	625	12.6	26.0	13.7	15.6	58	2092	2393	1708	732(98)	2310	2357	1866	1829
3	2019/02	A	448	672	573	660	12.4	13.0	13.0	13.0	49	2085	2395	1710	639(95)	2305	2330	1861	1833
4	2019/03	A	428	617	547	602	12.4	14.0	13.1	13.2	59	2081	2428	1727	743(100)	2293	2338	1865	1817
5	2019/04	A	425	542	505	532	12.4	13.0	13.0	13.0	29	2083	2339	1791	372(52)	2296	2319	1869	1828
6	2019/05	A																	
7	2019/06	A																	
8	2019/07	A																	
9	2019/08	A	571	623	623	0	12.3	13.0	13.0	.0	3	1566	1875	1188	53(7)	1842	0	1250	0
10	2019/09	A	453	661	568	632	12.6	25.0	13.8	16.0	49	1564	1879	1202	684(95)	1787	1814	1328	1301
11	2019/10	A	448	641	561	616	13.6	26.0	16.2	24.6	54	1566	1864	1221	735(99)	1788	1822	1335	1299
12	2019/11	A	440	637	559	624	12.9	25.0	14.3	17.8	55	1560	1881	1202	716(99)	1776	1809	1336	1303
13	2019/冬	A	444	681	563	643	12.6	26.0	13.5	14.6	167	2096	2411	1708	2113(98)	2314	2351	1870	1840
14	2019/春	A	427	617	531	592	12.4	14.0	13.0	13.1	89	2082	2428	1727	1115(51)	2294	2332	1866	1820
15	2019/夏	A	571	623	623	0	12.3	13.0	13.0	.0	3	1566	1875	1188	53(2)	1842	0	1250	0
16	2019/秋	A	449	665	562	619	13.0	26.0	14.8	18.9	160	1563	1881	1202	2135(98)	1784	1815	1333	1301
17	2019/年	A	443	681	561	631	12.7	26.0	13.9	15.9	420	1878	2428	1188	5416(62)	2098	2121	1656	1619

DIST3B.BAT　　測站編號:MSA

港灣技術研究中心

表3.2.8　2019年馬祖海域2站修補前潮差週期及潮位重要統計量統計表

序號	日期(年/月)	測站	平均潮差(公分)	最大潮差(公分)	1/3潮差(公分)	1/10潮差(公分)	平均週期(時)	最大週期(時)	1/3週期(時)	1/10週期(時)	潮差個數(個)	平均潮位(公分)	最高潮位(公分)	最低潮位(公分)	水位點數(個)(%)	平均高潮位(公分)	大潮平均高潮位(公分)	平均低潮位(公分)	大潮平均低潮位(公分)
1	2018/12	2	378	539	466	524	12.9	25.0	14.2	17.6	57	1686	1951	1367	739(99)	1871	1909	1494	1471
2	2019/01	2	*	*	*	*	*	*	*	*	0	1621	1749	1518	10(1)	0	0	0	0
3	2019/02	2	394	550	511	550	12.4	13.0	13.0	13.0	14	1666	1941	1375	182(27)	1857	0	1469	0
4	2019/03	2	366	568	467	530	12.8	25.0	14.3	18.0	57	1665	1954	1357	740(99)	1846	1887	1483	1441
5	2019/04	2	365	522	463	505	12.6	24.0	13.7	15.4	56	1667	1923	1397	711(99)	1849	1891	1486	1437
6	2019/05	2	367	521	461	501	12.4	13.0	13.0	13.0	58	1678	1931	1407	741(100)	1862	1899	1495	1457
7	2019/06	2	364	515	456	500	12.4	13.0	13.0	13.0	57	1679	1916	1399	719(100)	1861	1885	1497	1472
8	2019/07	2	372	557	472	537	12.4	13.0	13.0	13.0	59	1679	1936	1377	744(100)	1867	1891	1492	1478
9	2019/08	2	392	577	486	565	12.9	26.0	14.5	19.0	49	1689	1966	1376	694(93)	1886	1902	1488	1480
10	2019/09	2	385	557	483	541	12.6	24.0	13.6	15.2	56	1701	1969	1386	717(100)	1895	1918	1506	1479
11	2019/10	2	361	508	448	491	13.0	26.0	14.6	19.0	45	1704	1967	1404	678(91)	1887	1917	1514	1500
12	2019/11	2	366	543	458	512	14.0	26.0	17.5	25.3	48	1696	1974	1388	696(97)	1881	1908	1509	1476
13	2019/冬	2	382	547	475	524	12.8	25.0	14.0	16.3	71	1681	1951	1367	931(43)	1868	1909	1490	1471
14	2019/春	2	365	568	456	502	12.7	25.0	13.9	15.9	173	1670	1954	1357	2192(99)	1853	1893	1488	1445
15	2019/夏	2	376	577	474	530	12.6	26.0	13.4	14.5	167	1682	1966	1376	2157(98)	1871	1894	1492	1475
16	2019/秋	2	374	557	468	520	13.2	26.0	15.1	20.1	151	1700	1974	1386	2091(96)	1888	1914	1510	1483
17	2019/年	2	373	586	464	517	12.8	25.0	14.0	16.3	565	1684	1974	1357	7371(84)	1870	1900	1496	1468

DIST3B.BAT　測站編號:MS2　港灣技術研究中心

表3.2.9　2019年馬祖海域3站修補前潮差週期及潮位重要統計量統計表

序號	日期(年/月)	測站	平均潮差(公分)	最大潮差(公分)	1/3潮差(公分)	1/10潮差(公分)	平均週期(時)	最大週期(時)	1/3週期(時)	1/10週期(時)	潮差個數(個)	平均潮位(公分)	最高潮位(公分)	最低潮位(公分)	水位點數(個)(%)	平均高潮位(公分)	大潮平均高潮位(公分)	平均低潮位(公分)	大潮平均低潮位(公分)
1	2018/12	3																	
2	2019/01	3																	
3	2019/02	3																	
4	2019/03	3																	
5	2019/04	3																	
6	2019/05	3																	
7	2019/06	3																	
8	2019/07	3																	
9	2019/08	3	412	625	542	625	13.3	25.0	15.6	25.0	15	1118	1440	769	218(29)	1327	1378	894	857
10	2019/09	3	448	649	561	626	12.4	13.0	13.0	13.0	57	1139	1443	781	719(100)	1360	1384	910	880
11	2019/10	3	446	617	557	599	12.8	25.0	14.2	17.6	57	1138	1432	797	738(99)	1357	1388	910	878
12	2019/11	3	432	604	539	580	12.6	25.0	13.7	15.4	56	1126	1438	774	718(100)	1339	1370	907	877
13	2019/冬	3																	
14	2019/春	3																	
15	2019/夏	3	412	625	542	625	13.3	25.0	15.6	25.0	15	1118	1440	769	218(10)	1327	1378	894	857
16	2019/秋	3	443	649	557	611	12.6	25.0	13.6	15.1	172	1134	1443	774	2175(100)	1352	1381	909	878
17	2019/年	3	442	663	559	622	12.7	25.0	13.8	15.8	188	1133	1443	769	2393(27)	1351	1380	908	875

DIST3B.BAT　測站編號:MS3　港灣技術研究中心

表3.2.10　2019年馬祖海域4站修補前潮差週期及潮位重要統計量統計表

序號	日期(年/月)	測站	平均潮差(公分)	最大潮差(公分)	1/3潮差(公分)	1/10潮差(公分)	平均週期(時)	最大週期(時)	1/3週期(時)	1/10週期(時)	潮差個數(個)	平均潮位(公分)	最高潮位(公分)	最低潮位(公分)	水位點數(個)(%)	平均高潮位(公分)	大潮平均高潮位(公分)	平均低潮位(公分)	大潮平均低潮位(公分)
1	2018/12	4																	
2	2019/01	4																	
3	2019/02	4																	
4	2019/03	4																	
5	2019/04	4																	
6	2019/05	4																	
7	2019/06	4																	
8	2019/07	4																	
9	2019/08	4	450	543	519	0	12.3	13.0	13.0	.0	7	1483	1758	1171	102(14)	1707	1707	1242	1250
10	2019/09	4	389	571	494	551	12.4	13.0	13.0	13.0	57	1491	1764	1176	720(100)	1685	1710	1294	1268
11	2019/10	4	388	549	486	527	12.6	24.0	13.6	15.2	58	1496	1761	1195	741(100)	1689	1716	1300	1272
12	2019/11	4	379	573	484	535	12.4	13.0	13.0	13.0	57	1490	1771	1180	719(100)	1678	1708	1299	1273
13	2019/冬	4																	
14	2019/春	4																	
15	2019/夏	4	450	543	519	0	12.3	13.0	13.0	.0	7	1483	1758	1171	102(5)	1707	1707	1242	1250
16	2019/秋	4	386	571	487	534	12.5	24.0	13.2	13.6	174	1492	1771	1176	2180(100)	1684	1711	1298	1271
17	2019/年	4	390	573	493	543	12.5	25.0	13.3	14.0	182	1492	1771	1171	2282(26)	1686	1711	1295	1268

DIST3B.BAT　測站編號:MS4　港灣技術研究中心

3.3　2019 年馬祖海域主要測站 1(修補後)與其他測站(修補前)潮位歷線比較圖

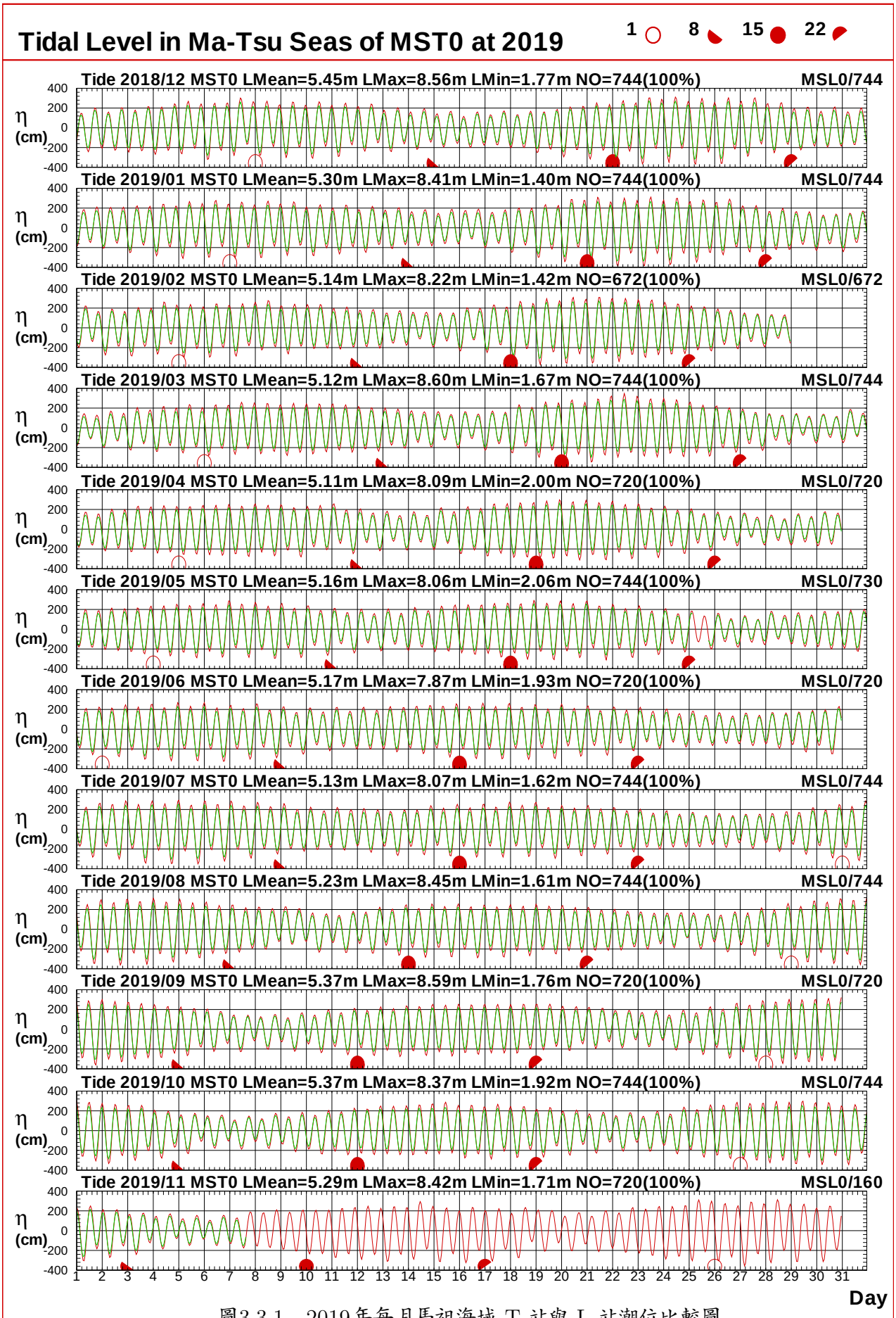


圖3.3.1　2019年每月馬祖海域 T 站與 L 站潮位比較圖

T18CMST0.1HA T18CMSL0.1H0 T191MST0.1HA T191MSL0.1H0 T192MST0.1HA T192MSL0.1H0
T193MST0.1HA T193MSL0.1H0 T194MST0.1HA T194MSL0.1H0 T195MST0.1HA T195MSL0.1H0

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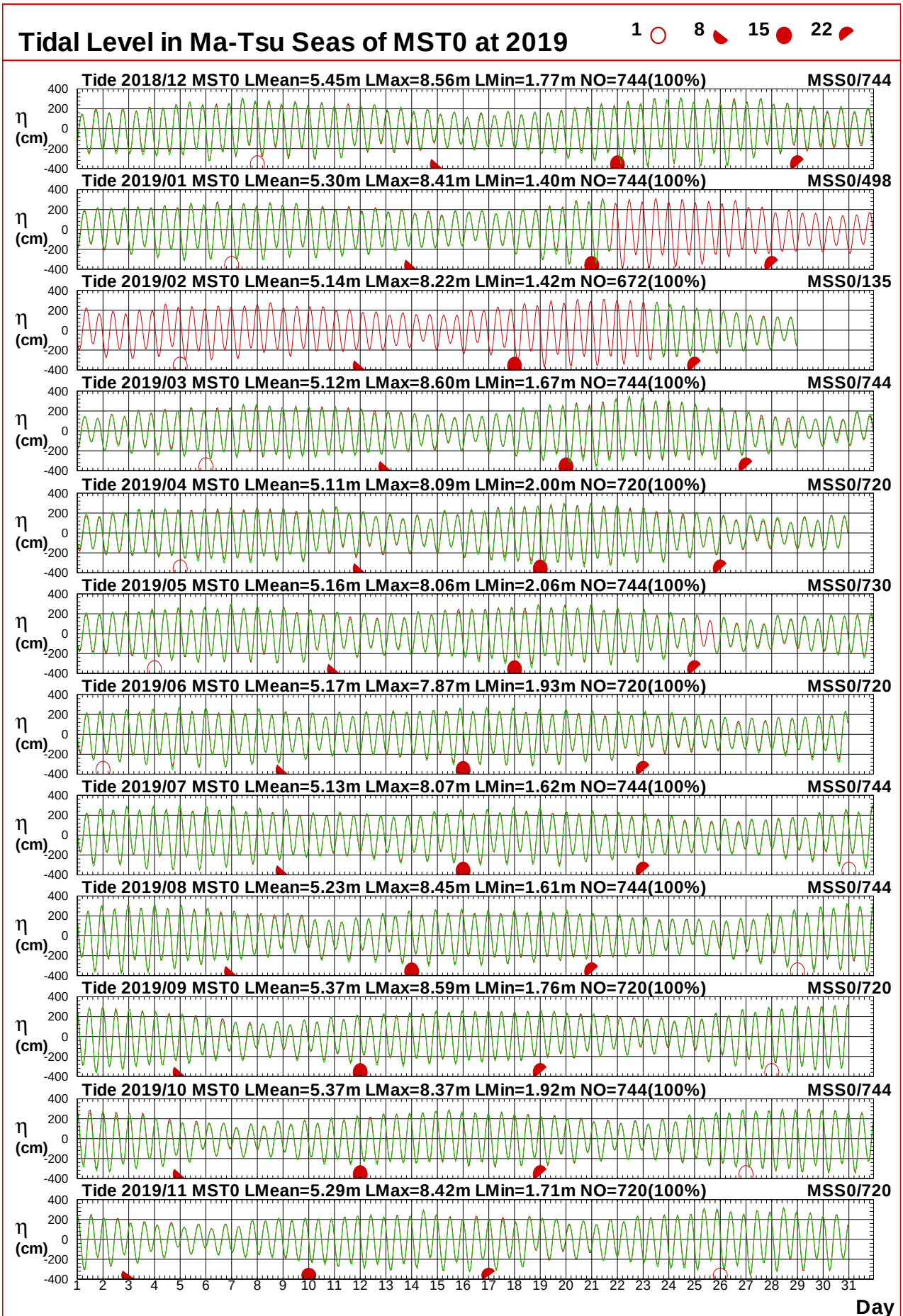


圖3.3.2　2019年每月馬祖海域 T 站與 S 站潮位比較圖

T18CMST0.1HA T18CMSS0.1H0 T191MST0.1HA T191MSS0.1H0 T192MST0.1HA T192MSS0.1H0
T193MST0.1HA T193MSS0.1H0 T194MST0.1HA T194MSS0.1H0 T195MST0.1HA T195MSS0.1H0

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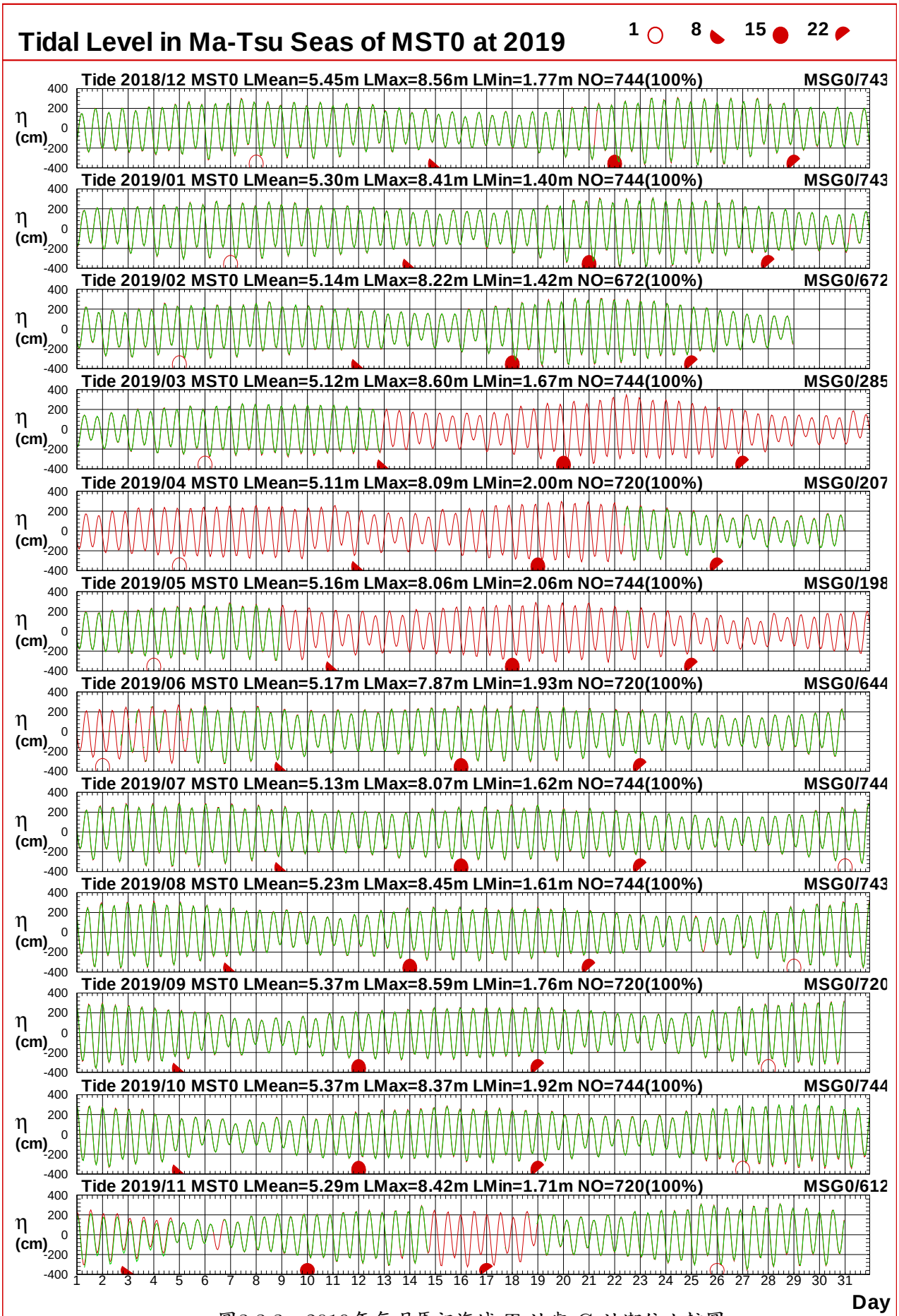


圖3.3.3　2019年每月馬祖海域 T 站與 G 站潮位比較圖

T18CMST0.1HA T18CMSG0.1H0 T191MST0.1HA T191MSG0.1H0 T192MST0.1HA T192MSG0.1H0
T193MST0.1HA T193MSG0.1H0 T194MST0.1HA T194MSG0.1H0 T195MST0.1HA T195MSG0.1H0

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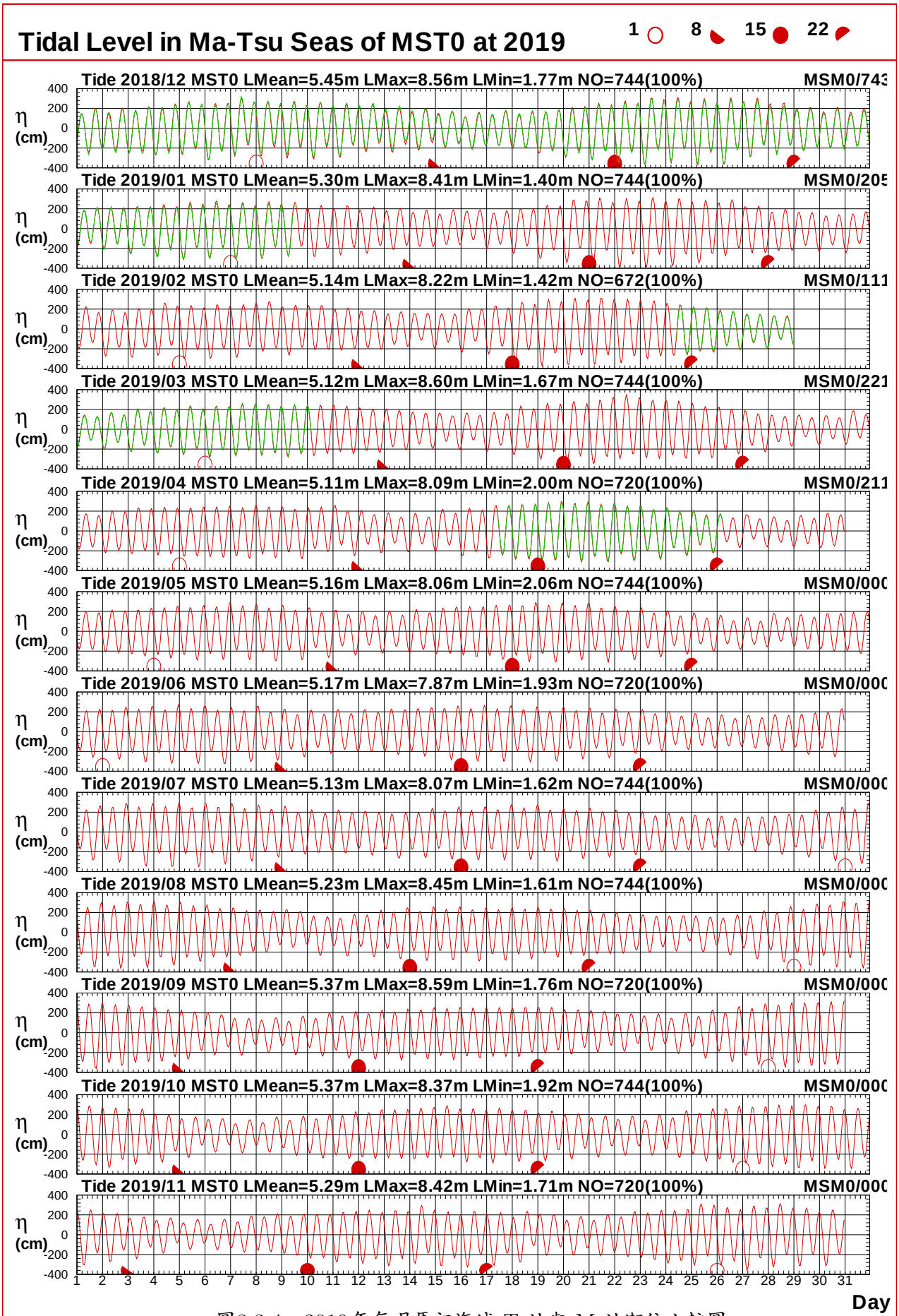


圖3.3.4　2019年每月馬祖海域 T 站與 M 站潮位比較圖

T18CMST0.1HA T18CMSM0.1H0 T191MST0.1HA T191MSM0.1H0 T192MST0.1HA T192MSM0.1H0
T193MST0.1HA T193MSM0.1H0 T194MST0.1HA T194MSM0.1H0 T195MST0.1HA T195MSM0.1H0

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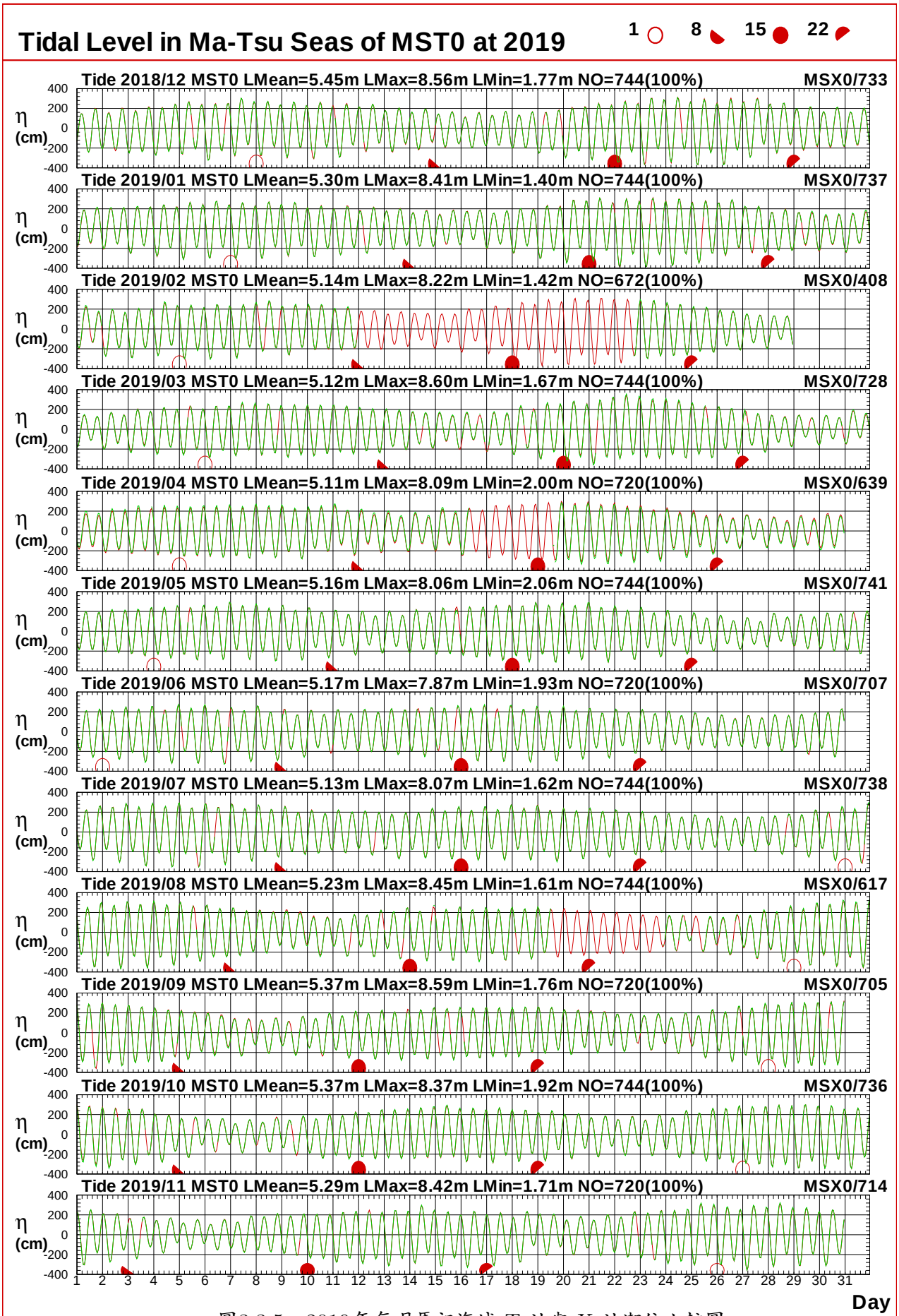


圖3.3.5　2019年每月馬祖海域 T 站與 X 站潮位比較圖

T18CMST0.1HA T18CMSX0.1H0 T191MST0.1HA T191MSX0.1H0 T192MST0.1HA T192MSX0.1H0
T193MST0.1HA T193MSX0.1H0 T194MST0.1HA T194MSX0.1H0 T195MST0.1HA T195MSX0.1H0

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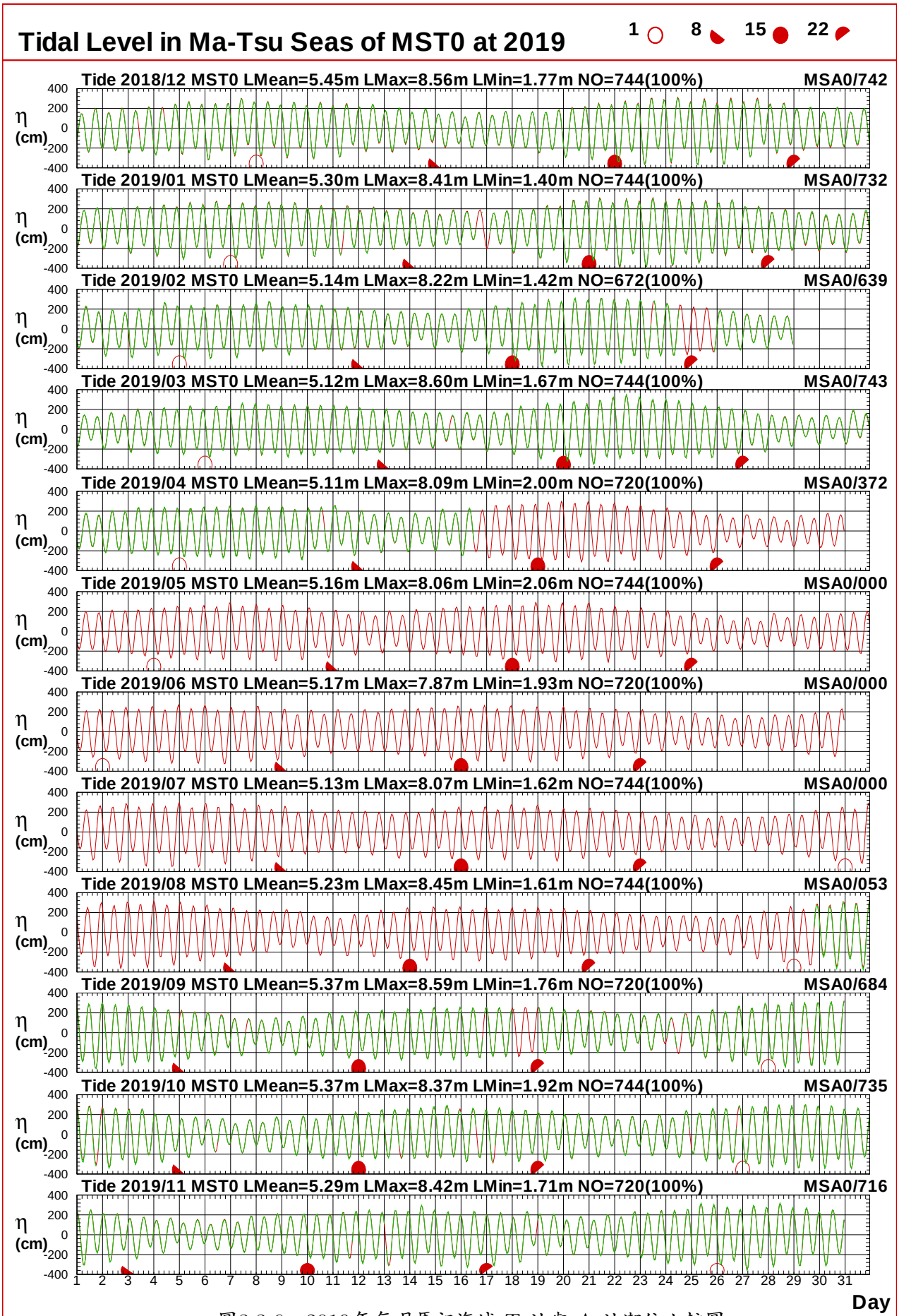


圖3.3.6　2019年每月馬祖海域 T 站與 A 站潮位比較圖

T18CMST0.1HA T18CMSA0.1H0 T191MST0.1HA T191MSA0.1H0 T192MST0.1HA T192MSA0.1H0
T193MST0.1HA T193MSA0.1H0 T194MST0.1HA T194MSA0.1H0 T195MST0.1HA T195MSA0.1H0

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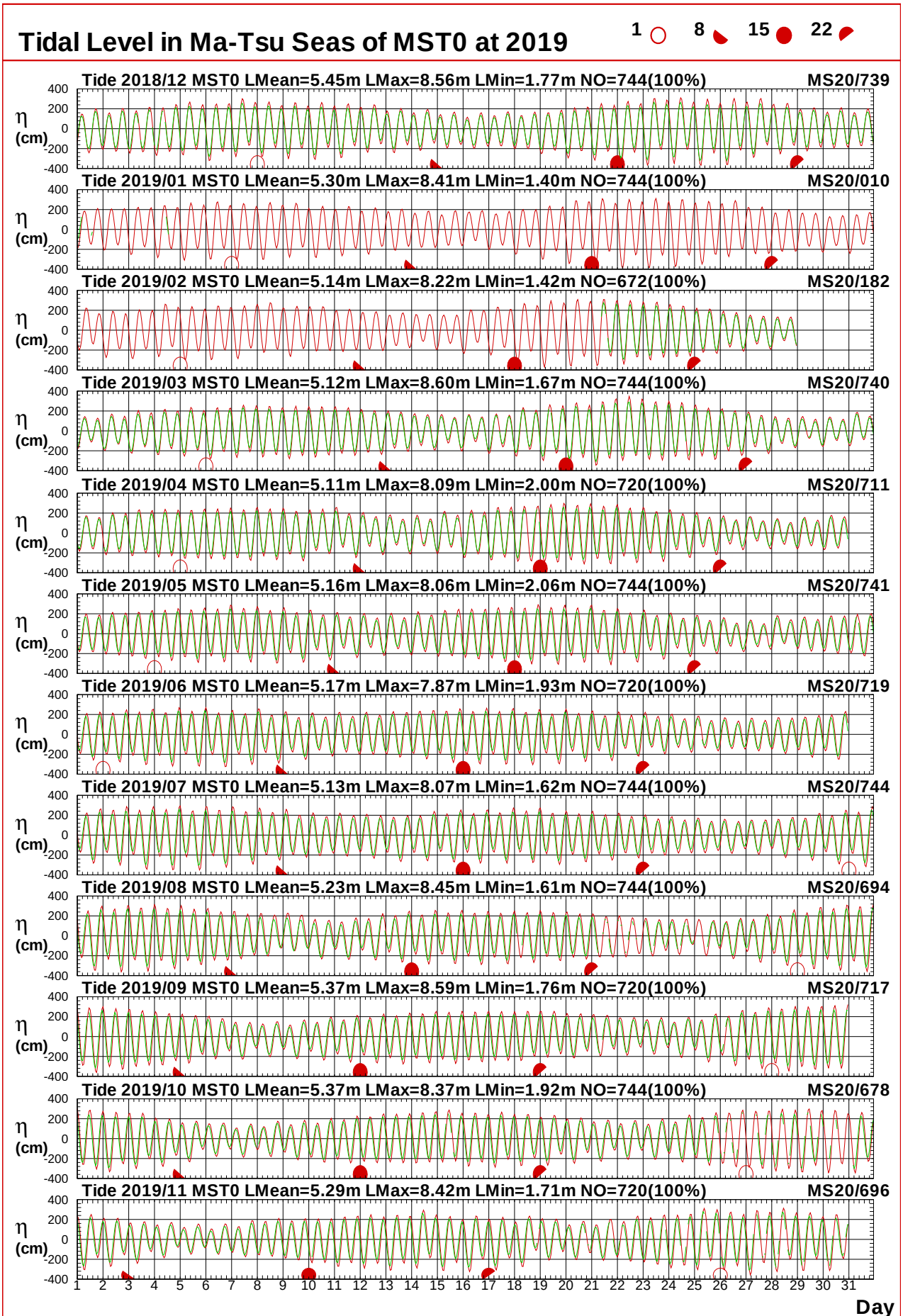


圖3.3.7　2019年每月馬祖海域 T 站與2站潮位比較圖

T18CMST0.1HA T18CMS20.1H0 T191MST0.1HA T191MS20.1H0 T192MST0.1HA T192MS20.1H0
T193MST0.1HA T193MS20.1H0 T194MST0.1HA T194MS20.1H0 T195MST0.1HA T195MS20.1H0

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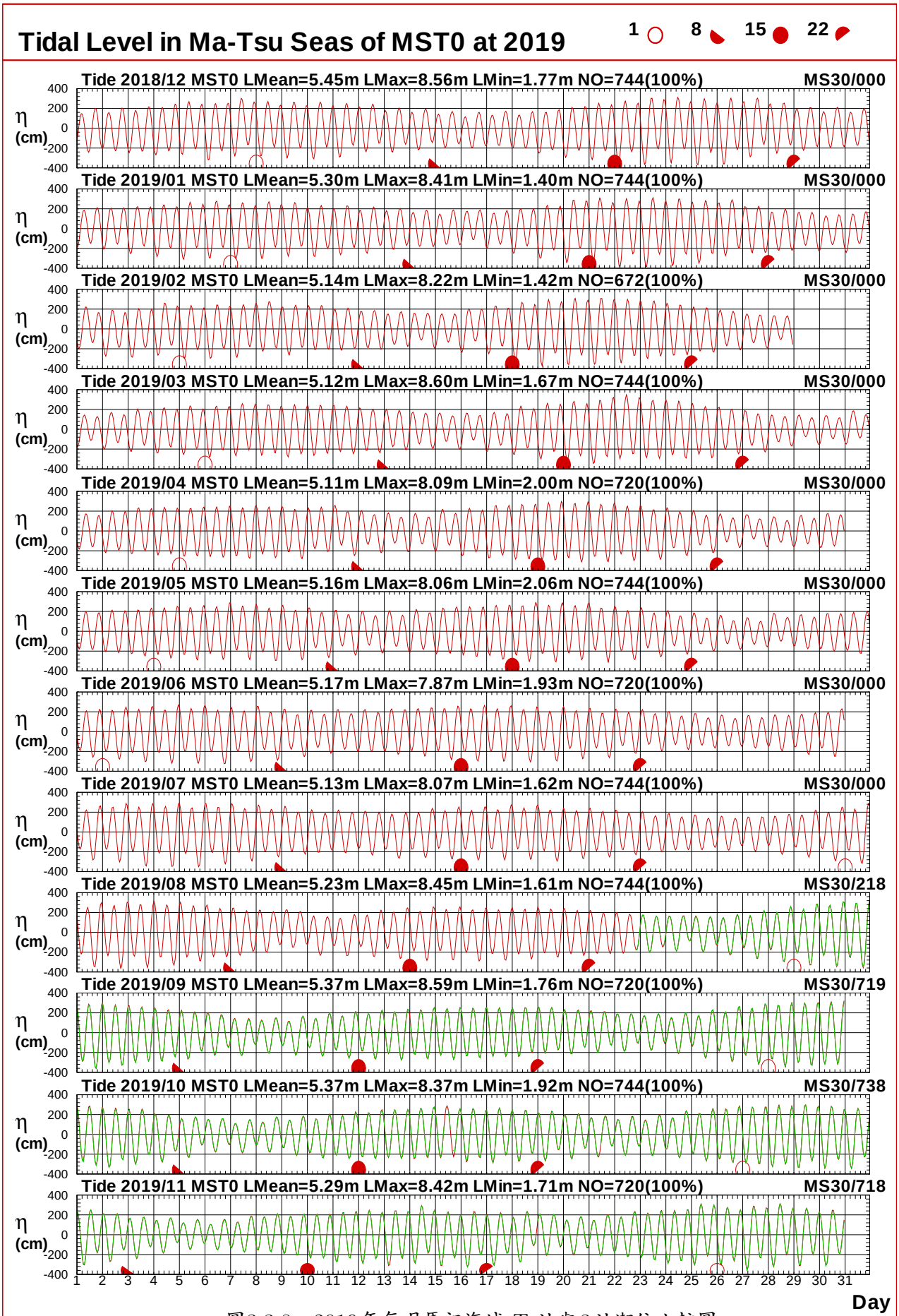


圖3.3.8　2019年每月馬祖海域 T 站與3站潮位比較圖

T18CMST0.1HA T18CMS30.1H0 T191MST0.1HA T191MS30.1H0 T192MST0.1HA T192MS30.1H0
T193MST0.1HA T193MS30.1H0 T194MST0.1HA T194MS30.1H0 T195MST0.1HA T195MS30.1H0

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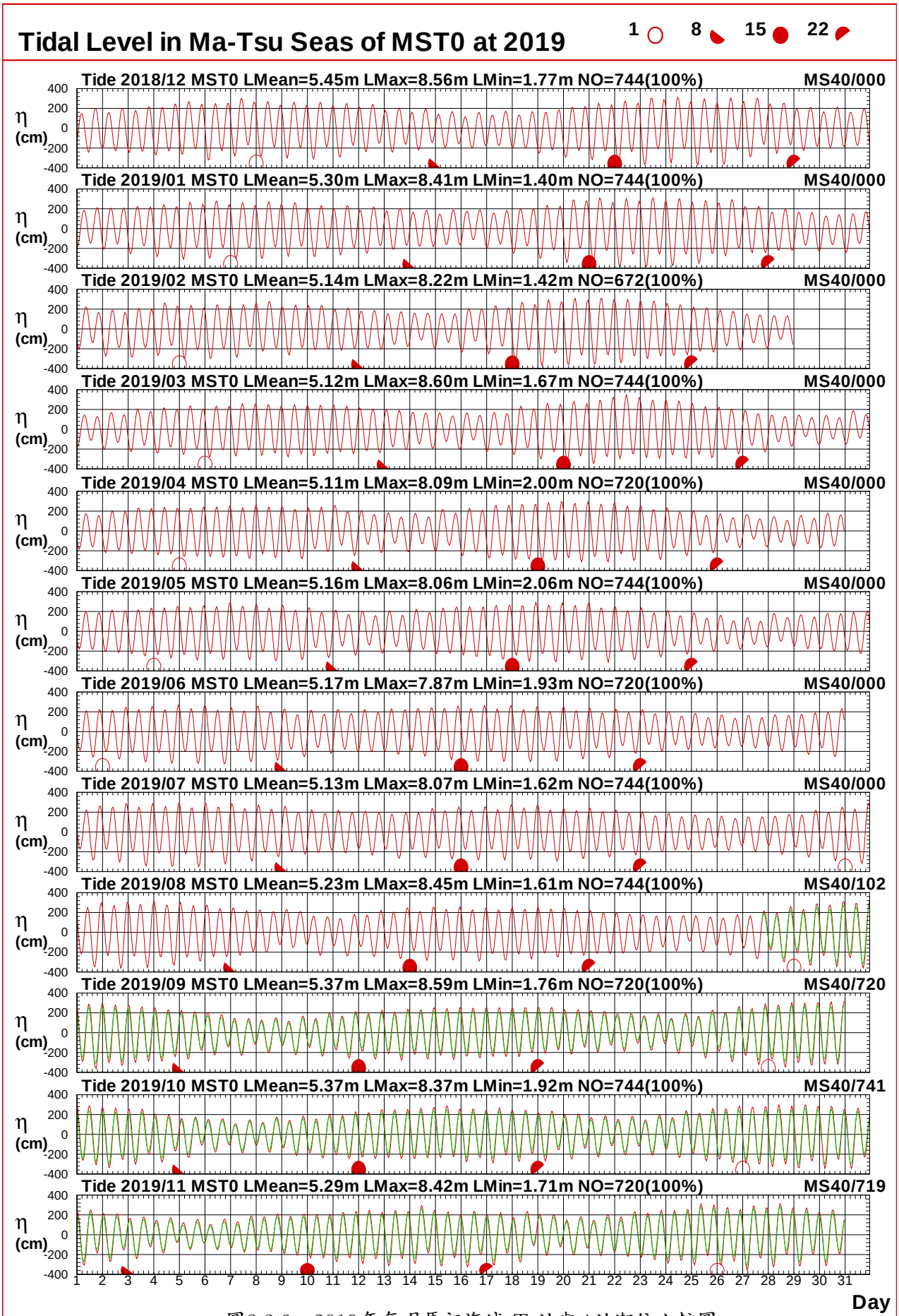


圖3.3.9　2019年每月馬祖海域 T 站與4站潮位比較圖

T18CMST0.1HA T18CMS40.1H0 T191MST0.1HA T191MS40.1H0 T192MST0.1HA T192MS40.1H0
T193MST0.1HA T193MS40.1H0 T194MST0.1HA T194MS40.1H0 T195MST0.1HA T195MS40.1H0

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3.4　2019 年馬祖海域主要測站 2(修補後)與其他測站(修補前)潮位歷線比較圖

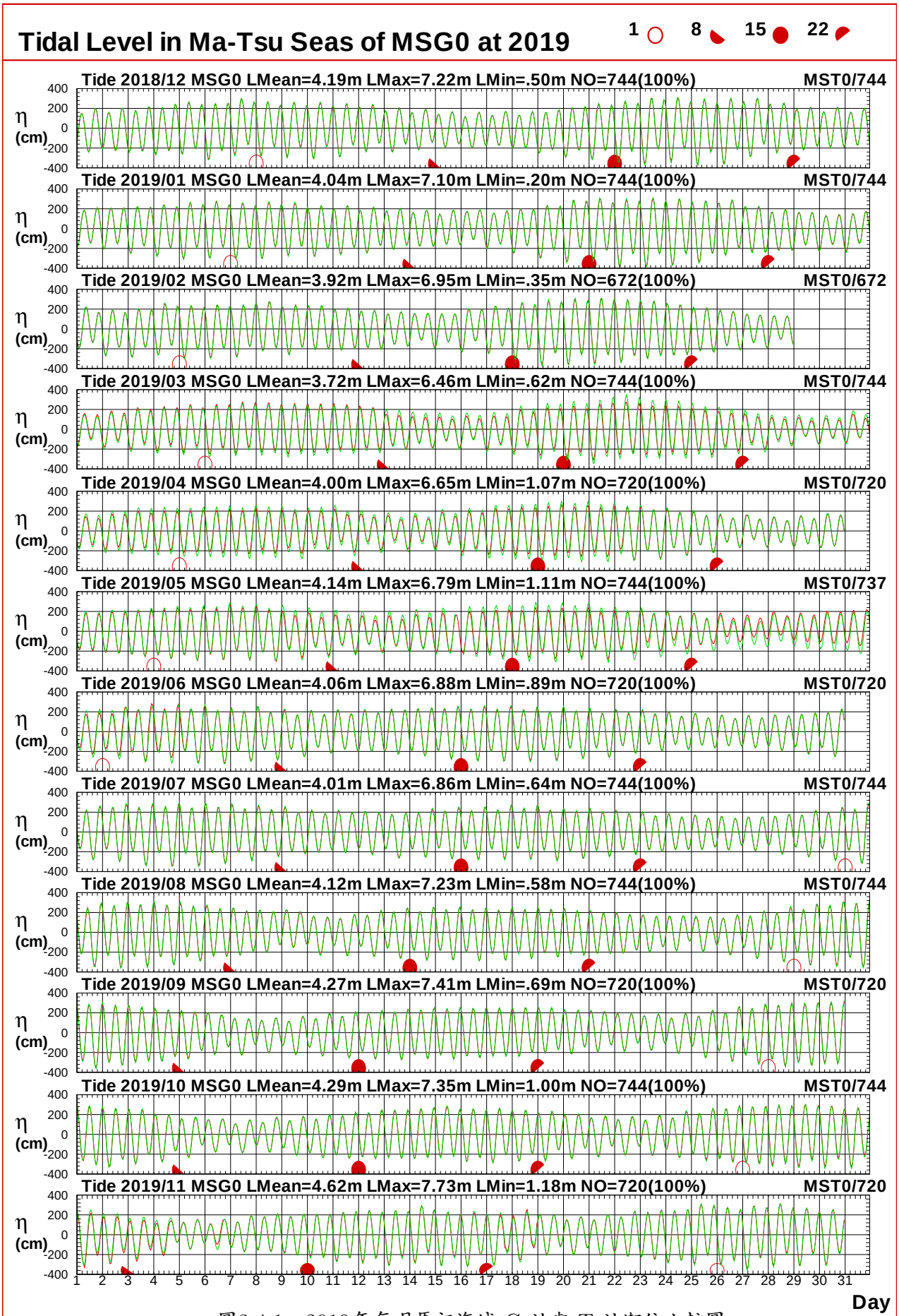


圖3.4.1　2019年每月馬祖海域 G 站與 T 站潮位比較圖

T18CMSG0.1HA T18CMST0.1H0 T191MSG0.1HA T191MST0.1H0 T192MSG0.1HA T192MST0.1H0
T193MSG0.1HA T193MST0.1H0 T194MSG0.1HA T194MST0.1H0 T195MSG0.1HA T195MST0.1H0

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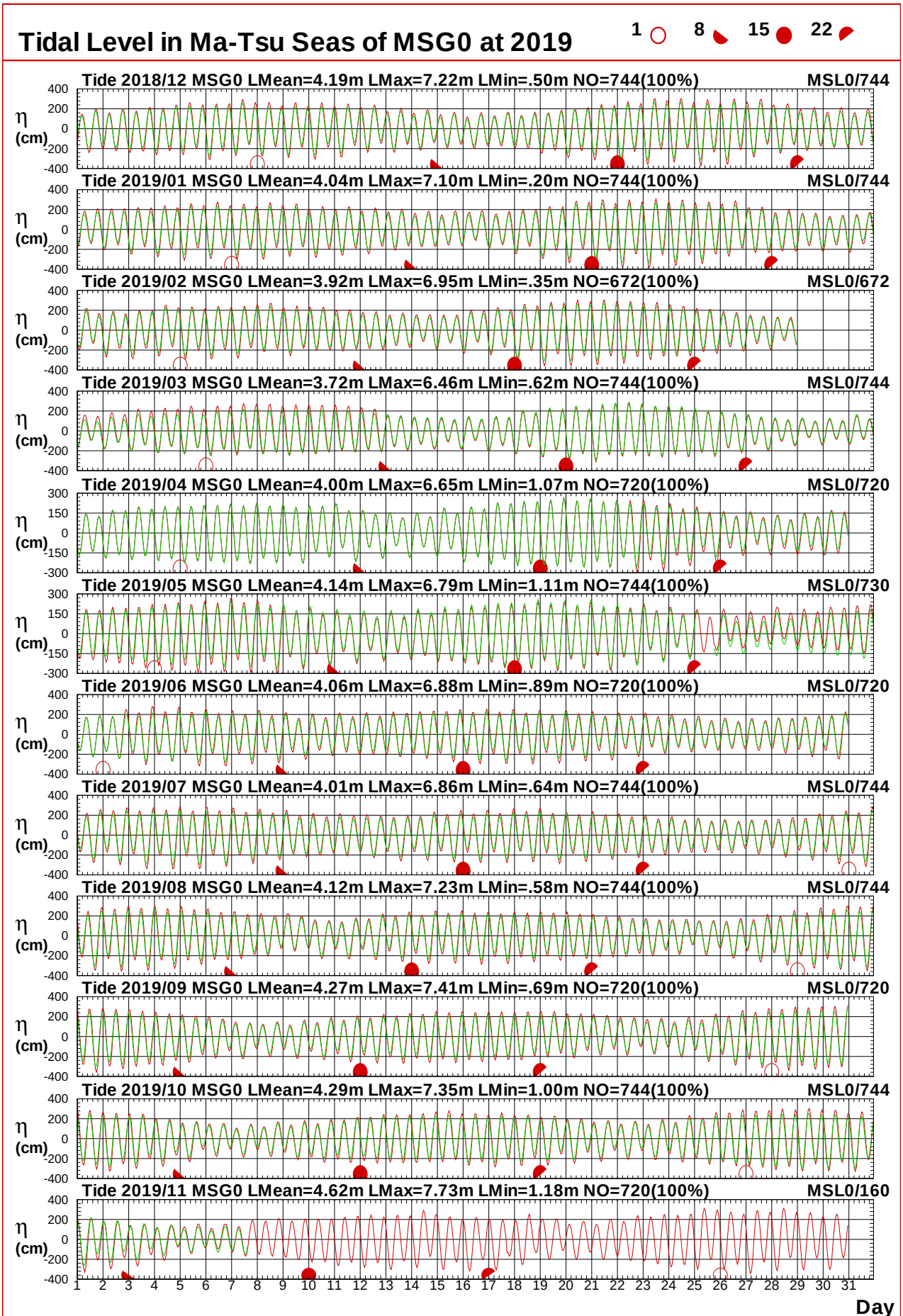


圖3.4.2　2019年每月馬祖海域 G 站與 L 站潮位比較圖

T18CMSG0.1HA T18CMSL0.1H0 T191MSG0.1HA T191MSL0.1H0 T192MSG0.1HA T192MSL0.1H0
T193MSG0.1HA T193MSL0.1H0 T194MSG0.1HA T194MSL0.1H0 T195MSG0.1HA T195MSL0.1H0

Institute of Harbor & Marine Technology

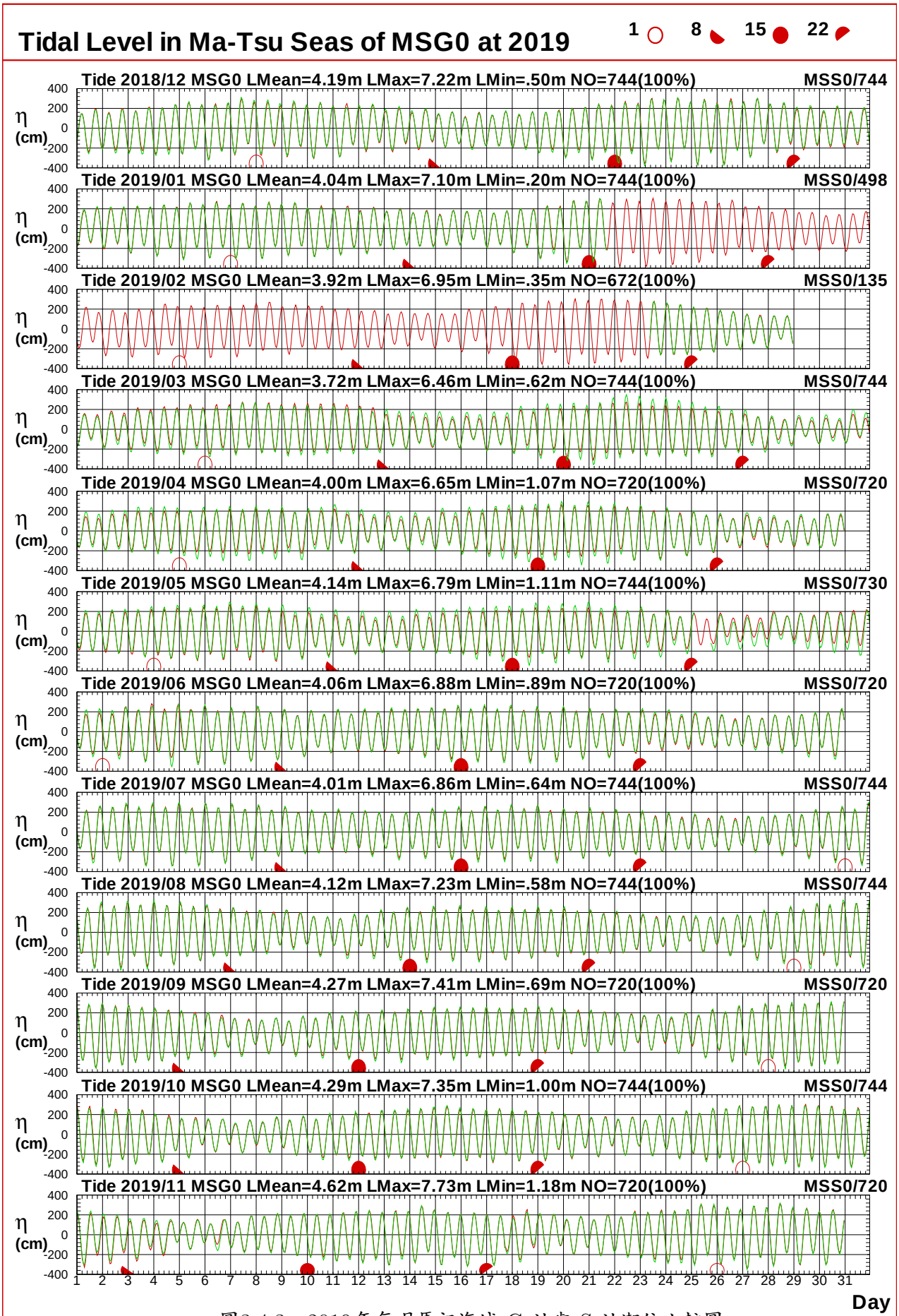


圖3.4.3　2019年每月馬祖海域 G 站與 S 站潮位比較圖

T18CMSG0.1HA T18CMSS0.1H0 T191MSG0.1HA T191MSS0.1H0 T192MSG0.1HA T192MSS0.1H0
T193MSG0.1HA T193MSS0.1H0 T194MSG0.1HA T194MSS0.1H0 T195MSG0.1HA T195MSS0.1H0

Institute of Harbor & Marine Technology

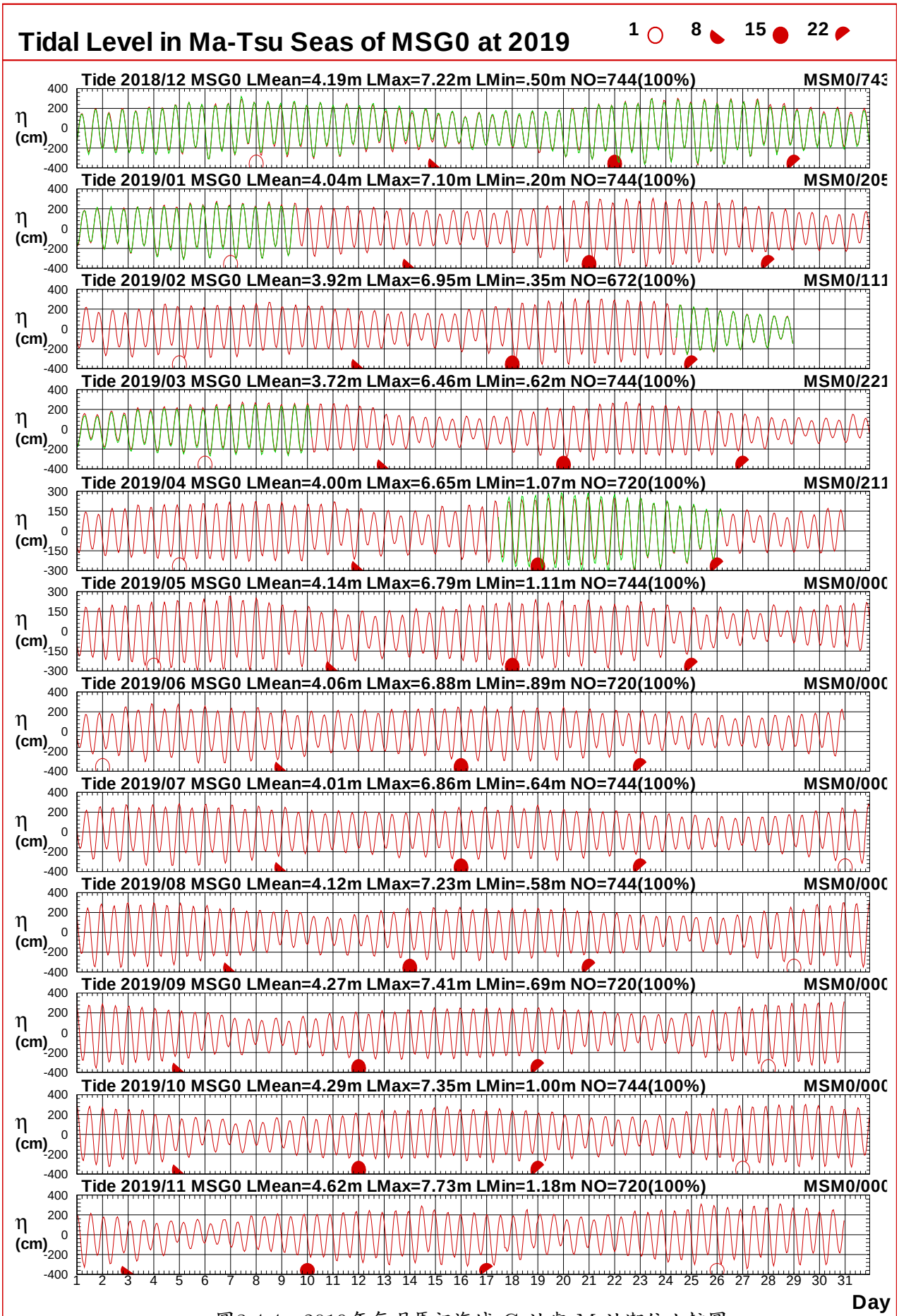


圖3.4.4　2019年每月馬祖海域 G 站與 M 站潮位比較圖

T18CMSG0.1HA T18CMSM0.1H0 T191MSG0.1HA T191MSM0.1H0 T192MSG0.1HA T192MSM0.1H0
T193MSG0.1HA T193MSM0.1H0 T194MSG0.1HA T194MSM0.1H0 T195MSG0.1HA T195MSM0.1H0

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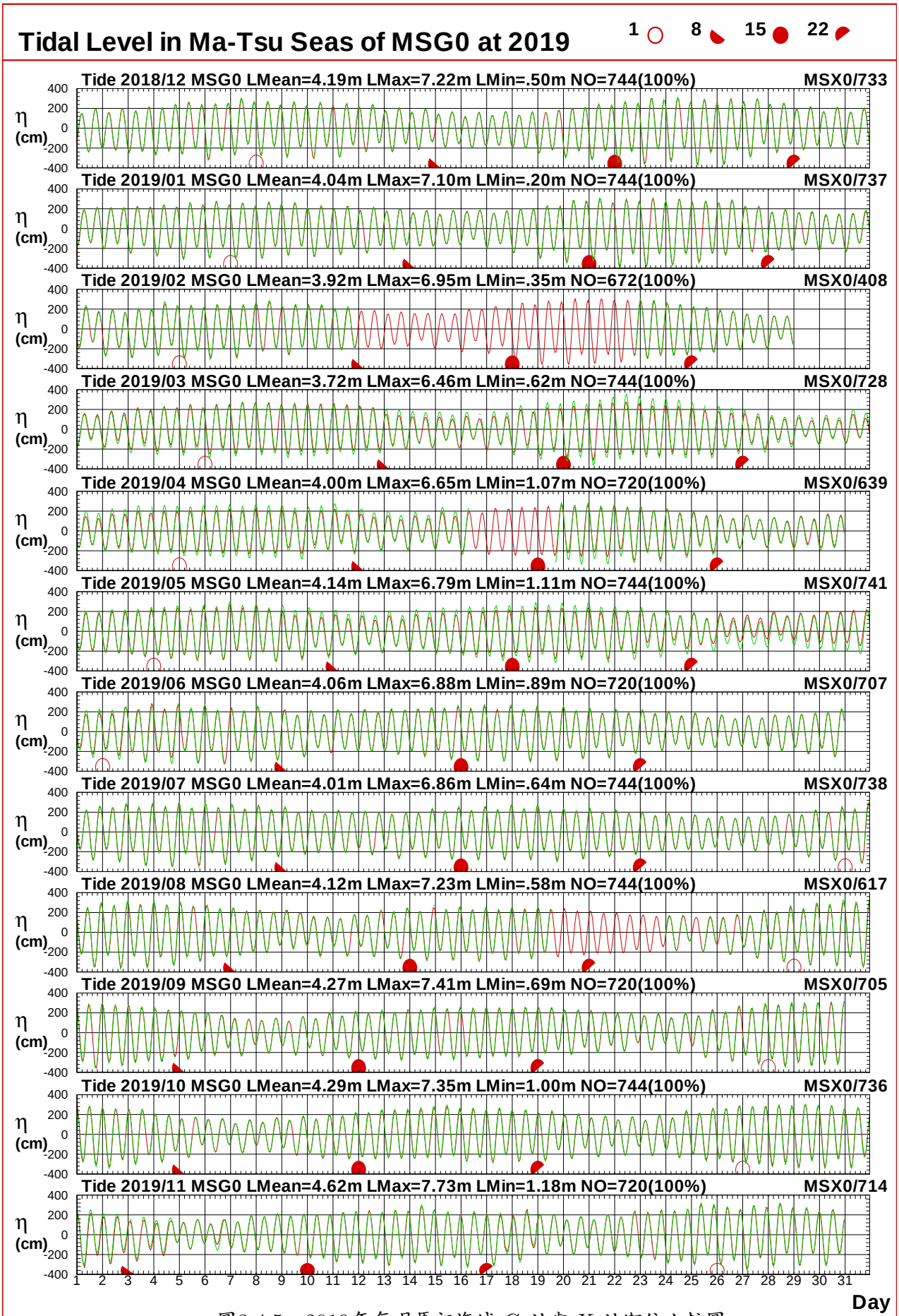


圖3.4.5　2019年每月馬祖海域 G 站與 X 站潮位比較圖

T18CMSG0.1HA T18CMSX0.1H0 T191MSG0.1HA T191MSX0.1H0 T192MSG0.1HA T192MSX0.1H0
T193MSG0.1HA T193MSX0.1H0 T194MSG0.1HA T194MSX0.1H0 T195MSG0.1HA T195MSX0.1H0

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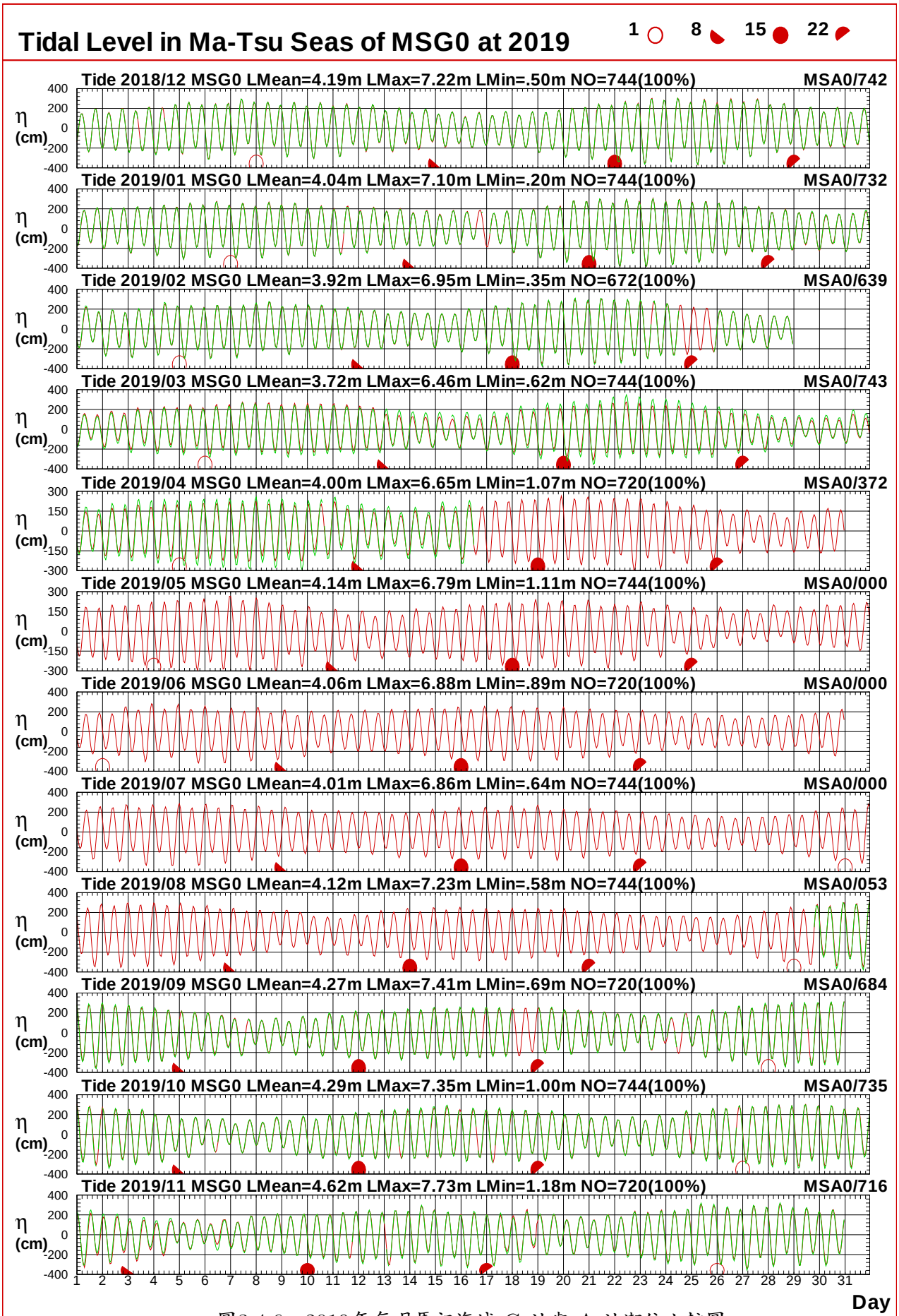


圖3.4.6　2019年每月馬祖海域 G 站與 A 站潮位比較圖

T18CMSG0.1HA T18CMSA0.1H0 T191MSG0.1HA T191MSA0.1H0 T192MSG0.1HA T192MSA0.1H0
T193MSG0.1HA T193MSA0.1H0 T194MSG0.1HA T194MSA0.1H0 T195MSG0.1HA T195MSA0.1H0

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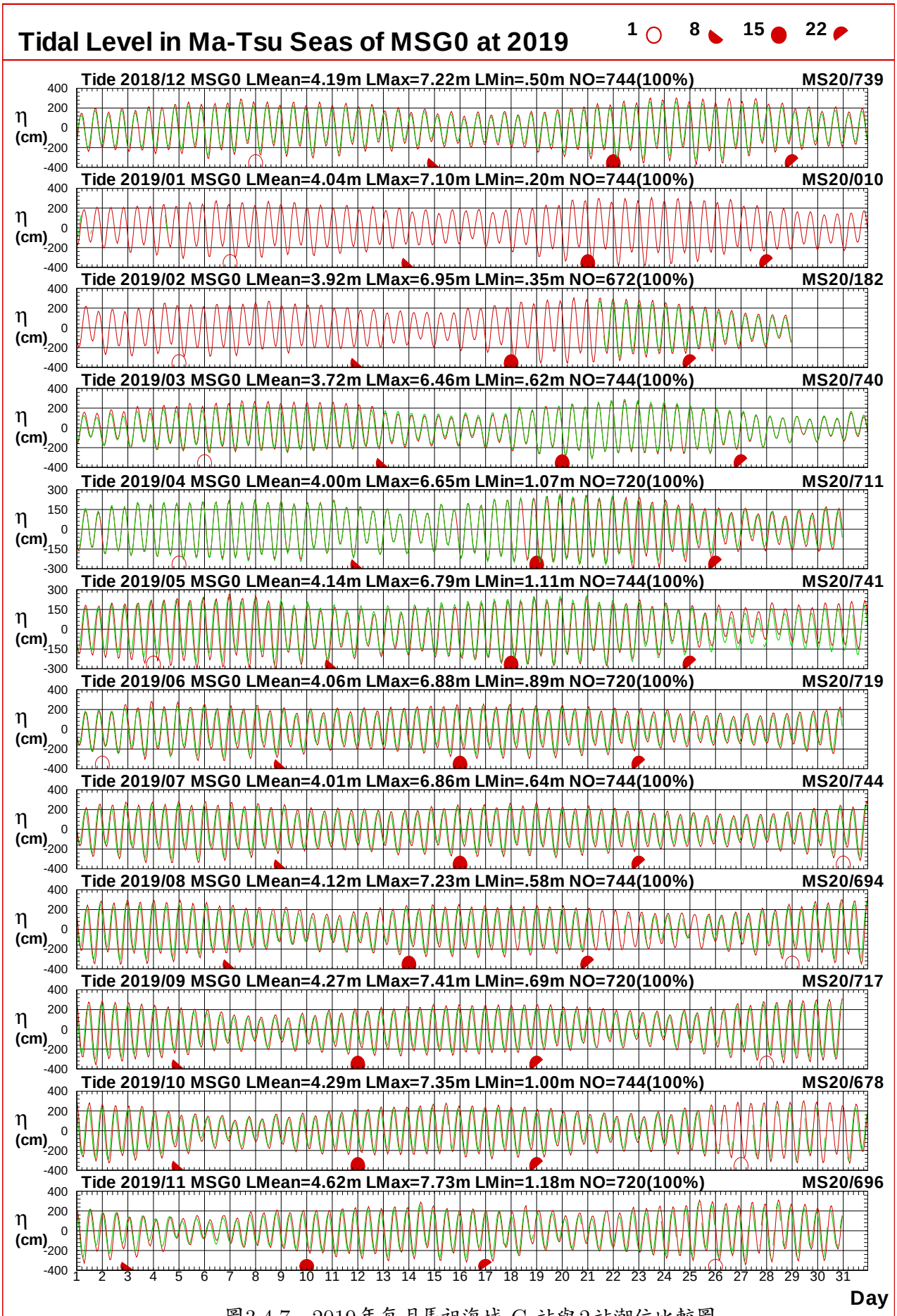


圖3.4.7　2019年每月馬祖海域 G 站與2站潮位比較圖

T18CMSG0.1HA T18CMS20.1H0 T191MSG0.1HA T191MS20.1H0 T192MSG0.1HA T192MS20.1H0
T193MSG0.1HA T193MS20.1H0 T194MSG0.1HA T194MS20.1H0 T195MSG0.1HA T195MS20.1H0

Institute of Harbor & Marine Technology

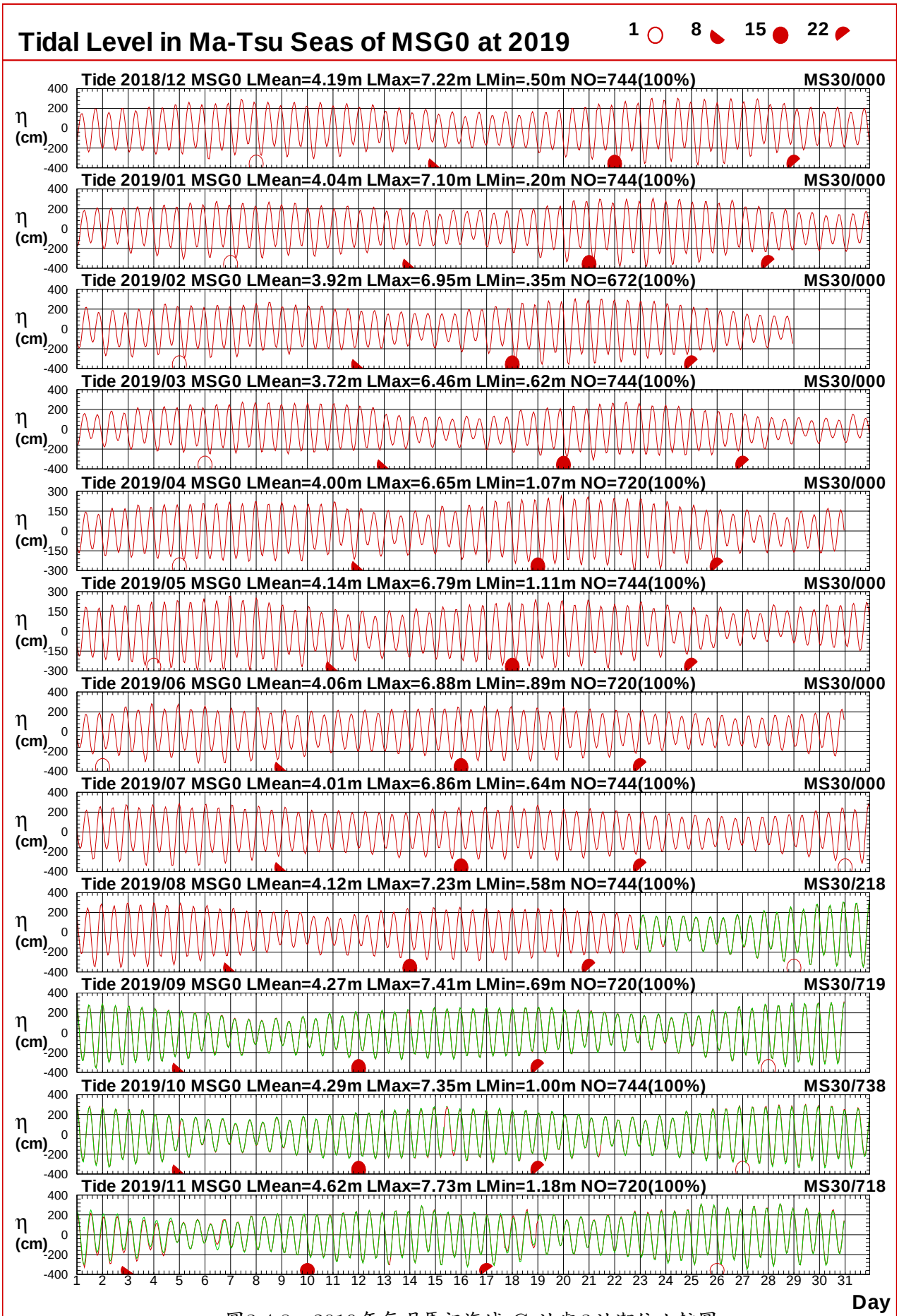


圖3.4.8　2019年每月馬祖海域 G 站與3站潮位比較圖

T18CMSG0.1HA T18CMS30.1H0 T191MSG0.1HA T191MS30.1H0 T192MSG0.1HA T192MS30.1H0
T193MSG0.1HA T193MS30.1H0 T194MSG0.1HA T194MS30.1H0 T195MSG0.1HA T195MS30.1H0

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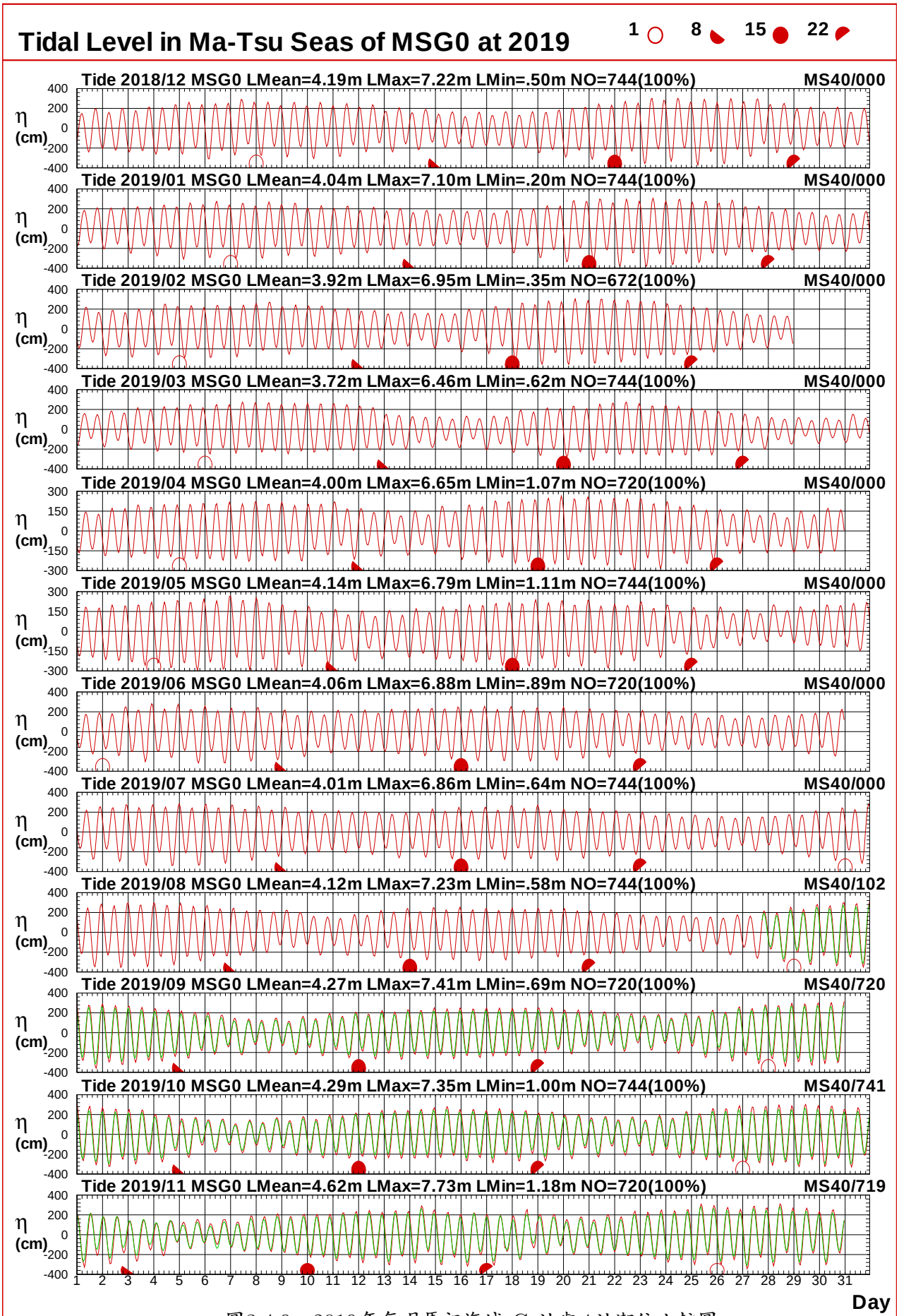


圖3.4.9　2019年每月馬祖海域 G 站與4站潮位比較圖

T18CMSG0.1HA T18CMS40.1H0 T191MSG0.1HA T191MS40.1H0 T192MSG0.1HA T192MS40.1H0
T193MSG0.1HA T193MS40.1H0 T194MSG0.1HA T194MS40.1H0 T195MSG0.1HA T195MS40.1H0

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3.5　2019 年馬祖海域主要測站 3(修補後)與其他測站(修補前)潮位歷線比較圖

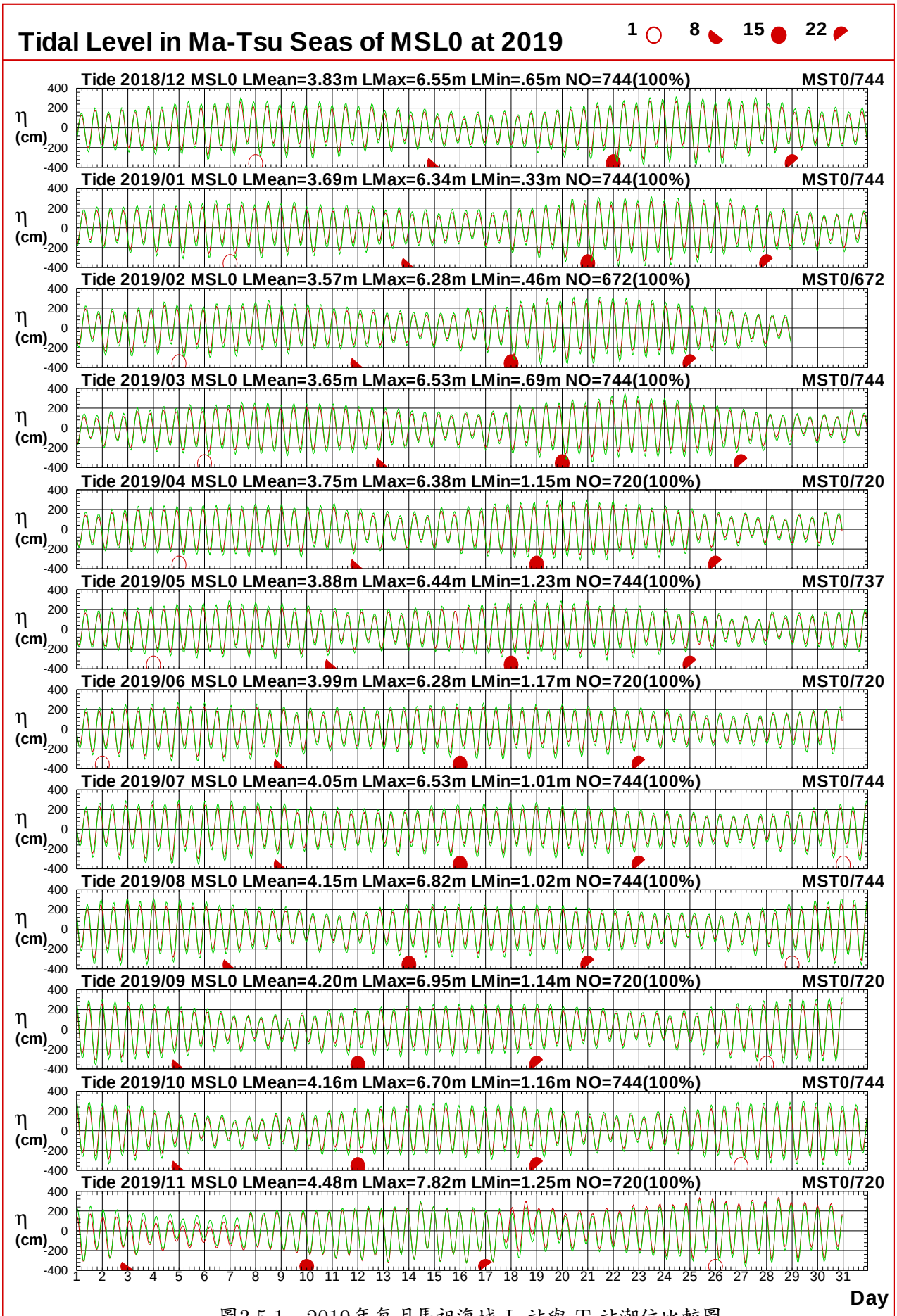


圖3.5.1　2019年每月馬祖海域 L 站與 T 站潮位比較圖

T18CMSL0.1HA T18CMST0.1H0 T191MSL0.1HA T191MST0.1H0 T192MSL0.1HA T192MST0.1H0
T193MSL0.1HA T193MST0.1H0 T194MSL0.1HA T194MST0.1H0 T195MSL0.1HA T195MST0.1H0

Institute of Harbor & Marine Technology

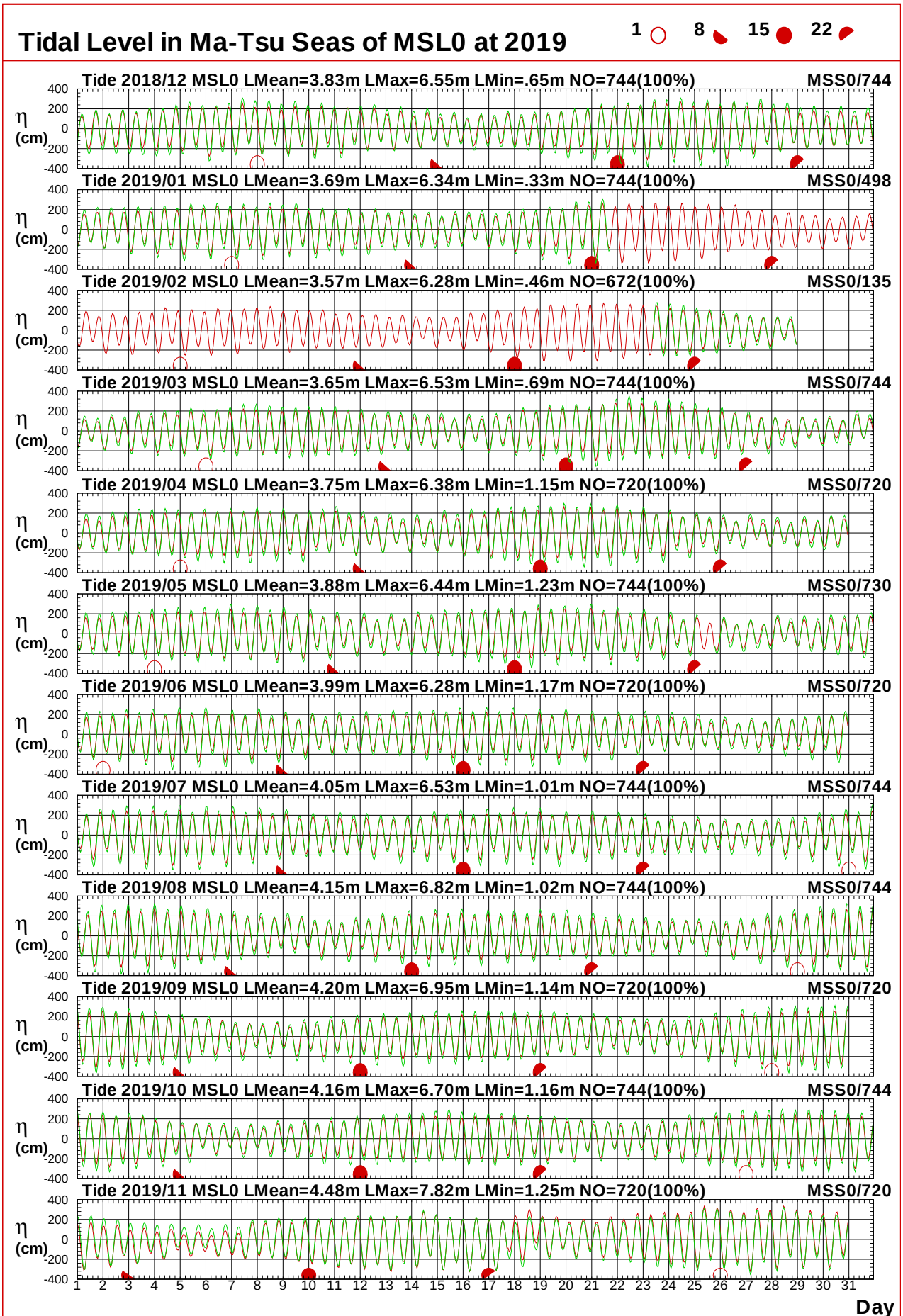


圖3.5.2　2019年每月馬祖海域 L 站與 S 站潮位比較圖

T18CMSL0.1HA T18CMSS0.1H0 T191MSL0.1HA T191MSS0.1H0 T192MSL0.1HA T192MSS0.1H0
T193MSL0.1HA T193MSS0.1H0 T194MSL0.1HA T194MSS0.1H0 T195MSL0.1HA T195MSS0.1H0

Institute of Harbor & Marine Technology

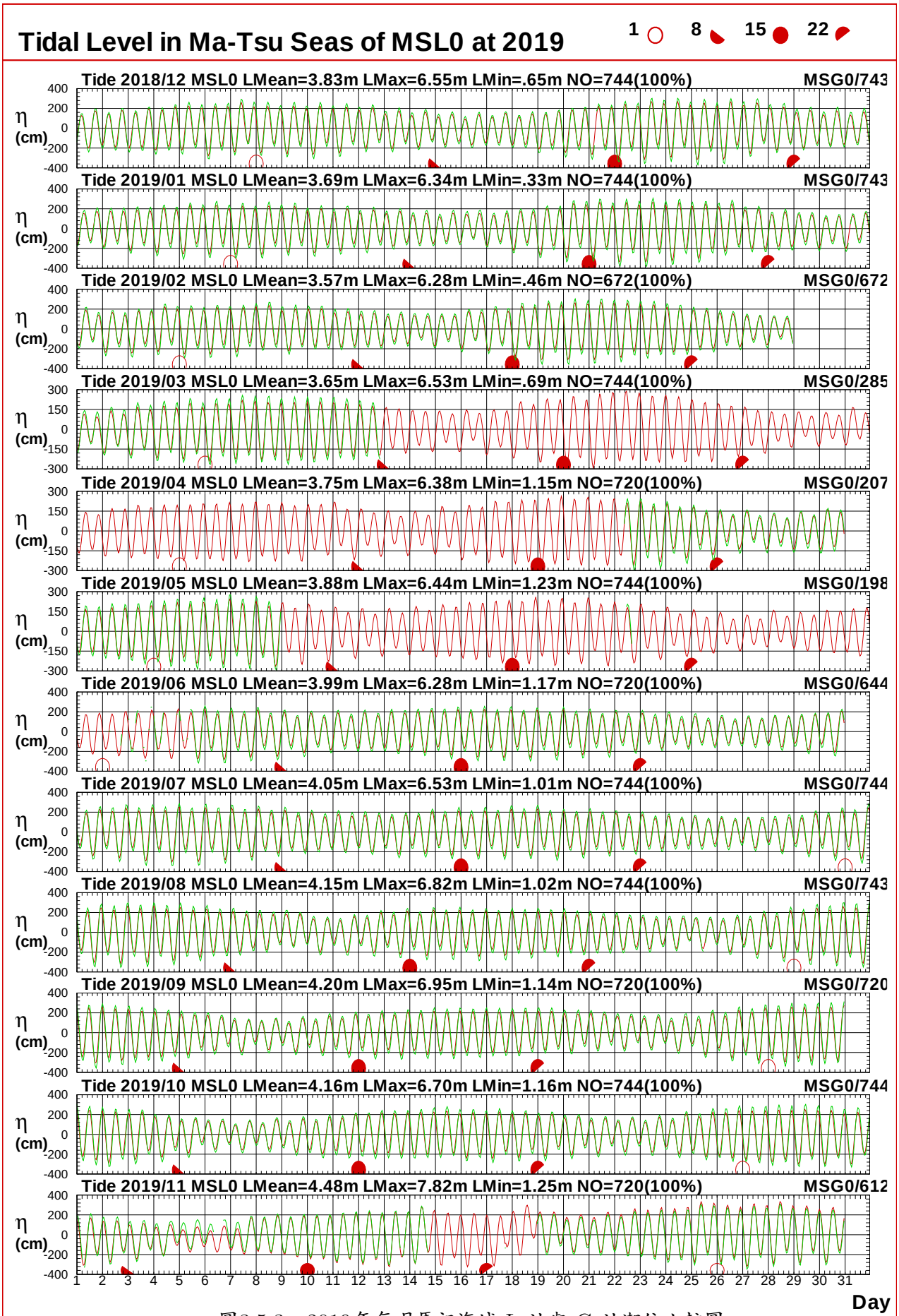


圖3.5.3　2019年每月馬祖海域 L 站與 G 站潮位比較圖

T18CMSL0.1HA T18CMSG0.1H0 T191MSL0.1HA T191MSG0.1H0 T192MSL0.1HA T192MSG0.1H0
T193MSL0.1HA T193MSG0.1H0 T194MSL0.1HA T194MSG0.1H0 T195MSL0.1HA T195MSG0.1H0

Institute of Harbor & Marine Technology

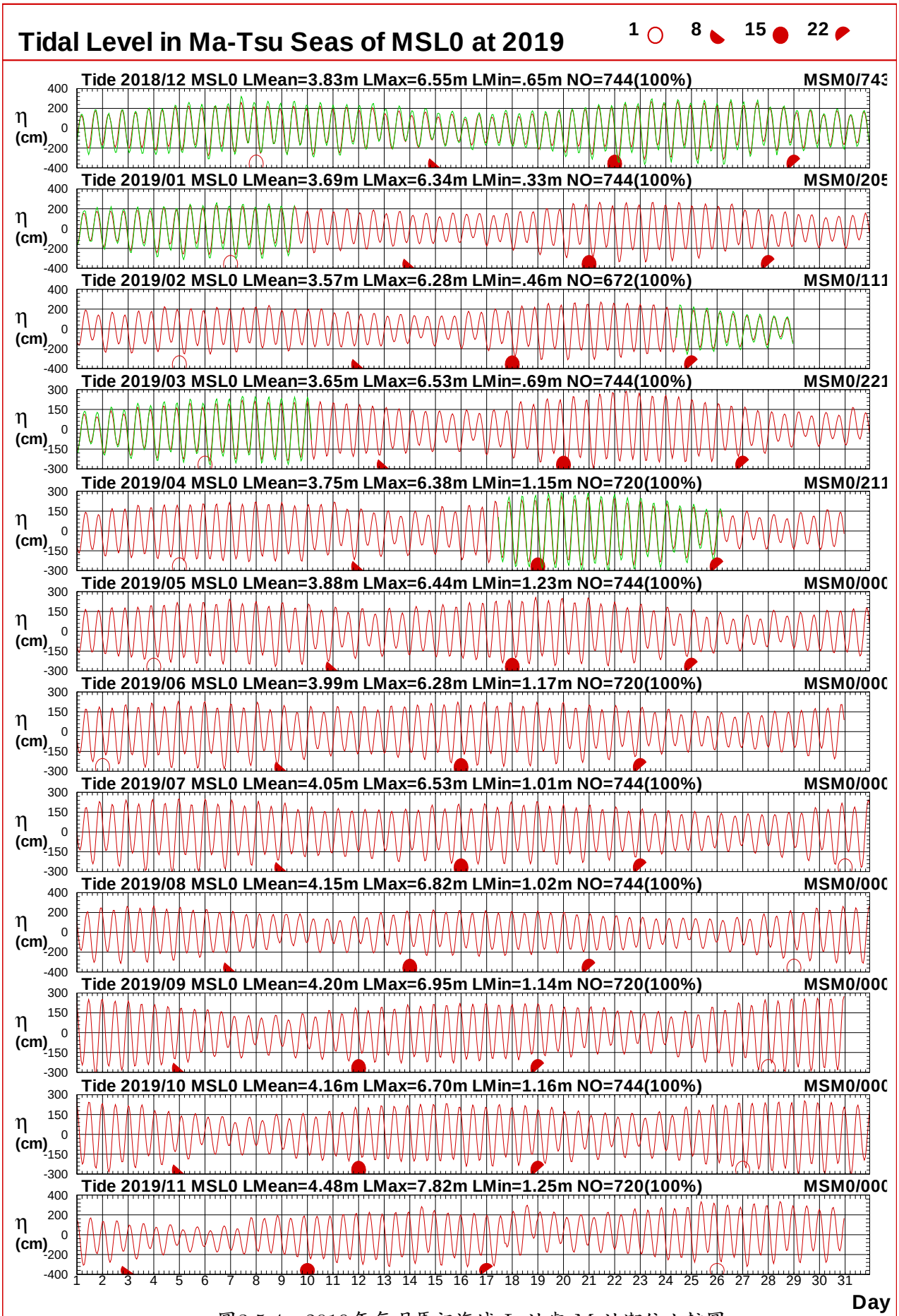


圖3.5.4　2019年每月馬祖海域 L 站與 M 站潮位比較圖

T18CMSL0.1HA T18CMSM0.1H0 T191MSL0.1HA T191MSM0.1H0 T192MSL0.1HA T192MSM0.1H0
T193MSL0.1HA T193MSM0.1H0 T194MSL0.1HA T194MSM0.1H0 T195MSL0.1HA T195MSM0.1H0

Institute of Harbor & Marine Technology

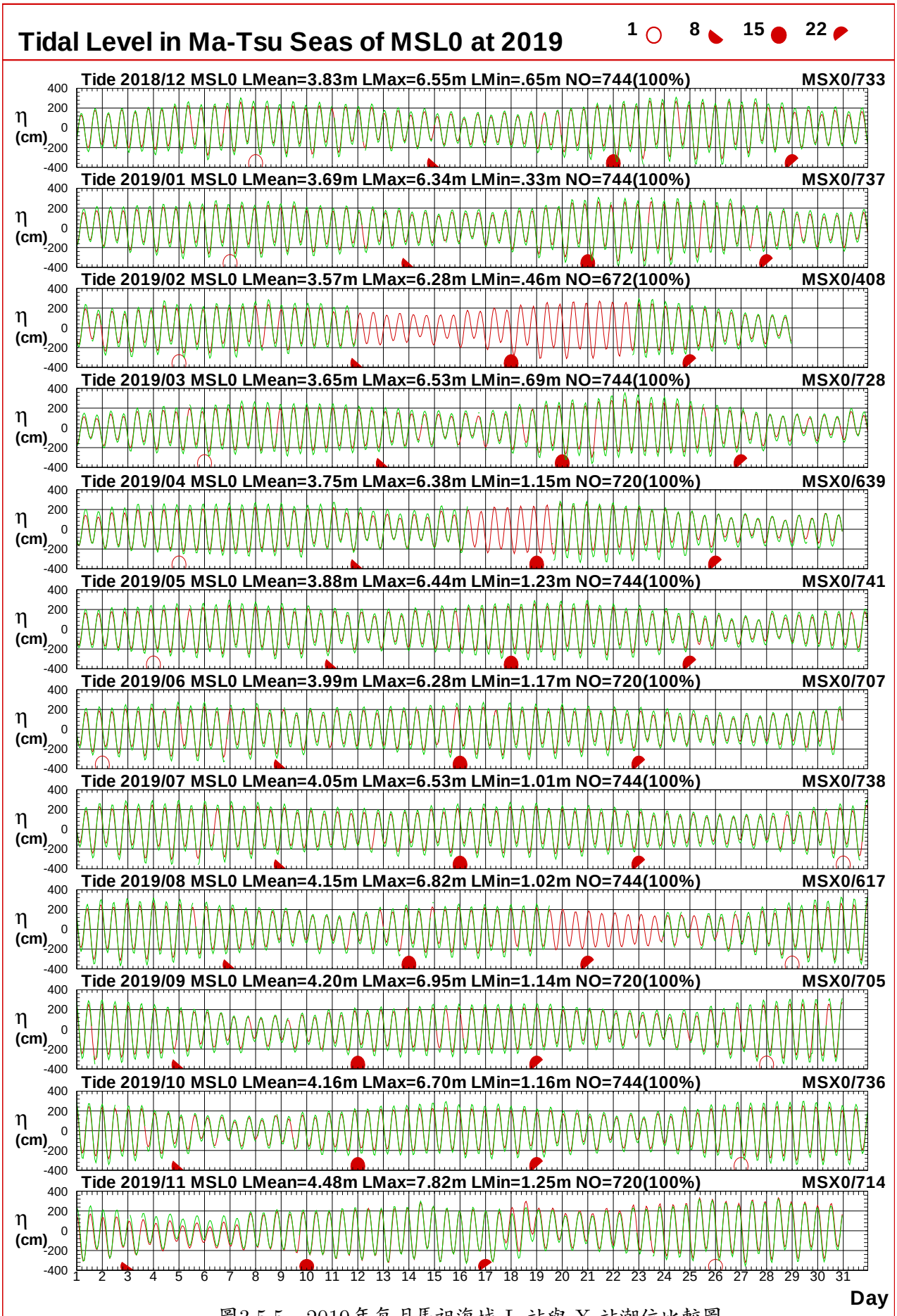


圖3.5.5　2019年每月馬祖海域 L 站與 X 站潮位比較圖

T18CMSL0.1HA T18CMSX0.1H0 T191MSL0.1HA T191MSX0.1H0 T192MSL0.1HA T192MSX0.1H0
T193MSL0.1HA T193MSX0.1H0 T194MSL0.1HA T194MSX0.1H0 T195MSL0.1HA T195MSX0.1H0

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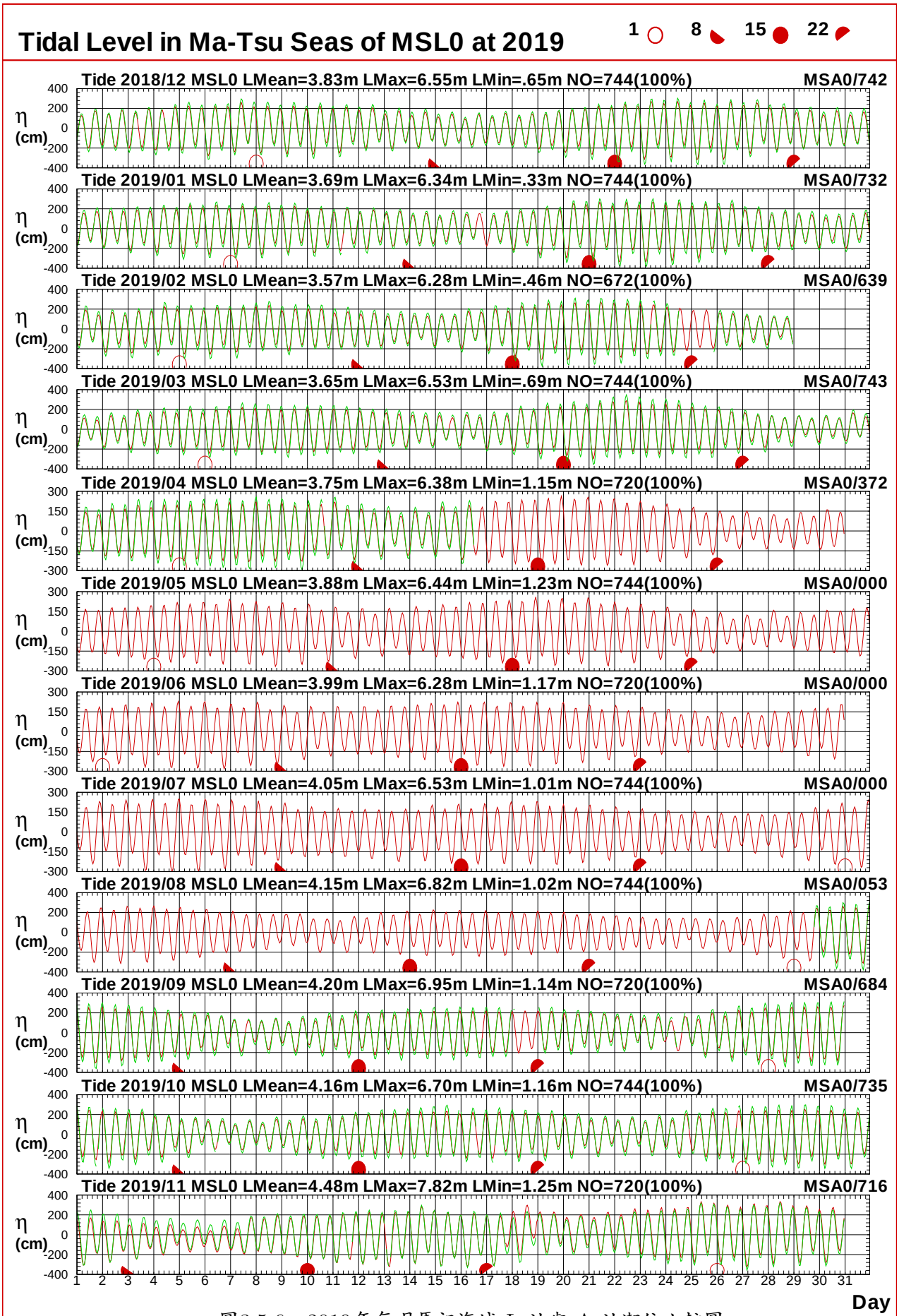


圖3.5.6　2019年每月馬祖海域 L 站與 A 站潮位比較圖

T18CMSL0.1HA T18CMSA0.1H0 T191MSL0.1HA T191MSA0.1H0 T192MSL0.1HA T192MSA0.1H0
T193MSL0.1HA T193MSA0.1H0 T194MSL0.1HA T194MSA0.1H0 T195MSL0.1HA T195MSA0.1H0

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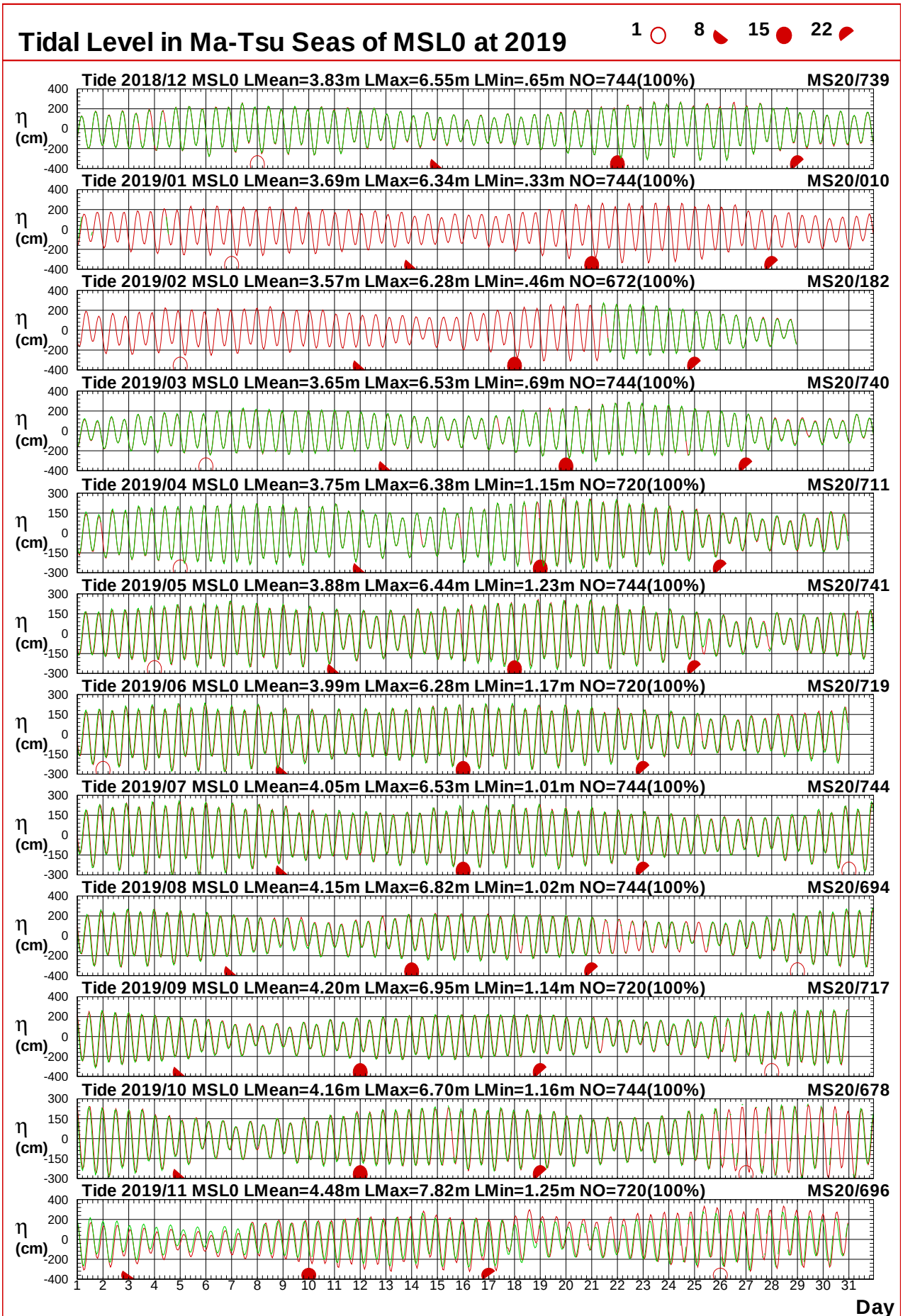


圖3.5.7　2019年每月馬祖海域 L 站與2站潮位比較圖

T18CMSL0.1HA T18CMS20.1H0 T191MSL0.1HA T191MS20.1H0 T192MSL0.1HA T192MS20.1H0
T193MSL0.1HA T193MS20.1H0 T194MSL0.1HA T194MS20.1H0 T195MSL0.1HA T195MS20.1H0

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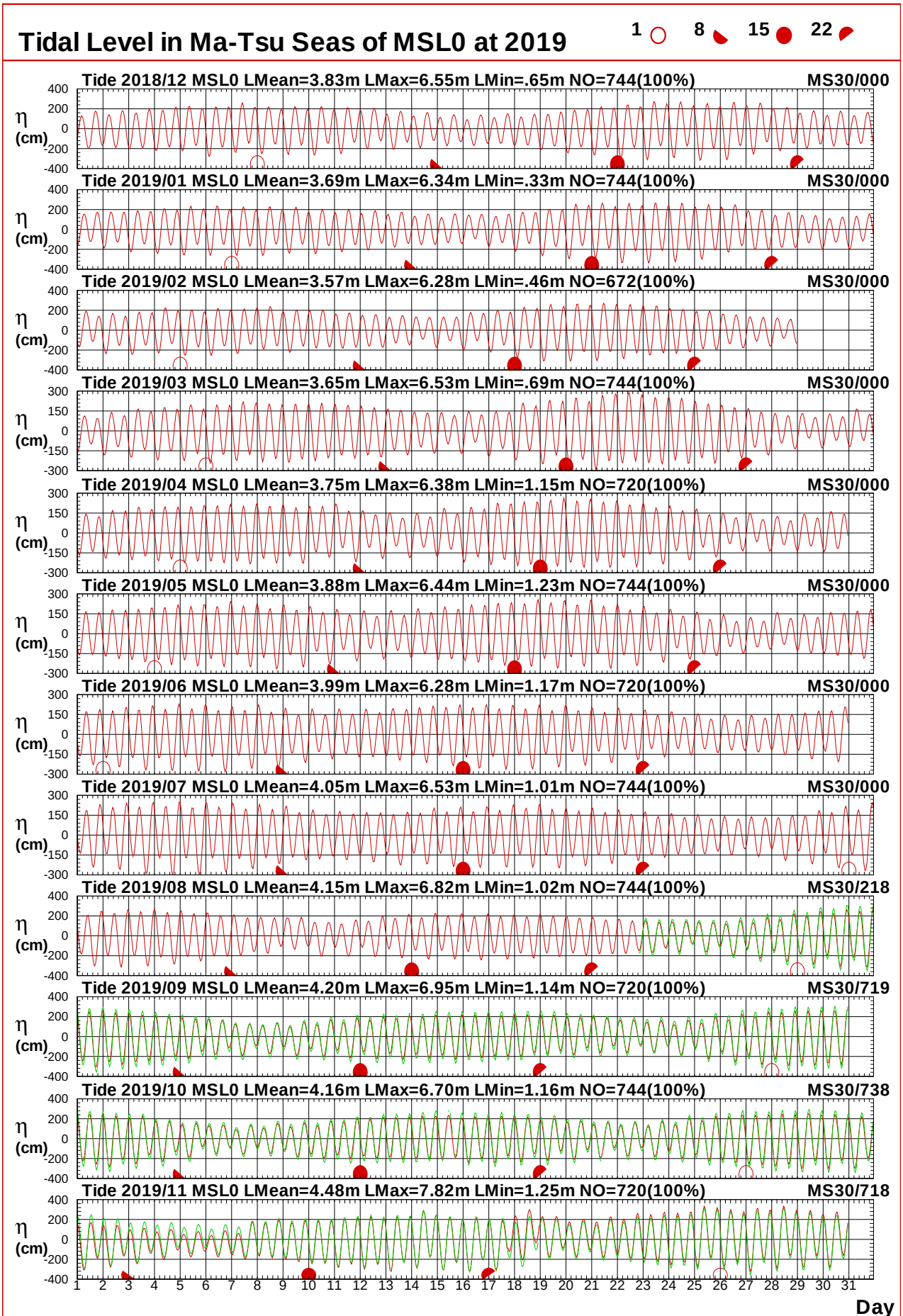


圖3.5.8　2019年每月馬祖海域 L 站與3站潮位比較圖

T18CMSL0.1HA T18CMS30.1H0 T191MSL0.1HA T191MS30.1H0 T192MSL0.1HA T192MS30.1H0
T193MSL0.1HA T193MS30.1H0 T194MSL0.1HA T194MS30.1H0 T195MSL0.1HA T195MS30.1H0

Institute of Harbor & Marine Technology

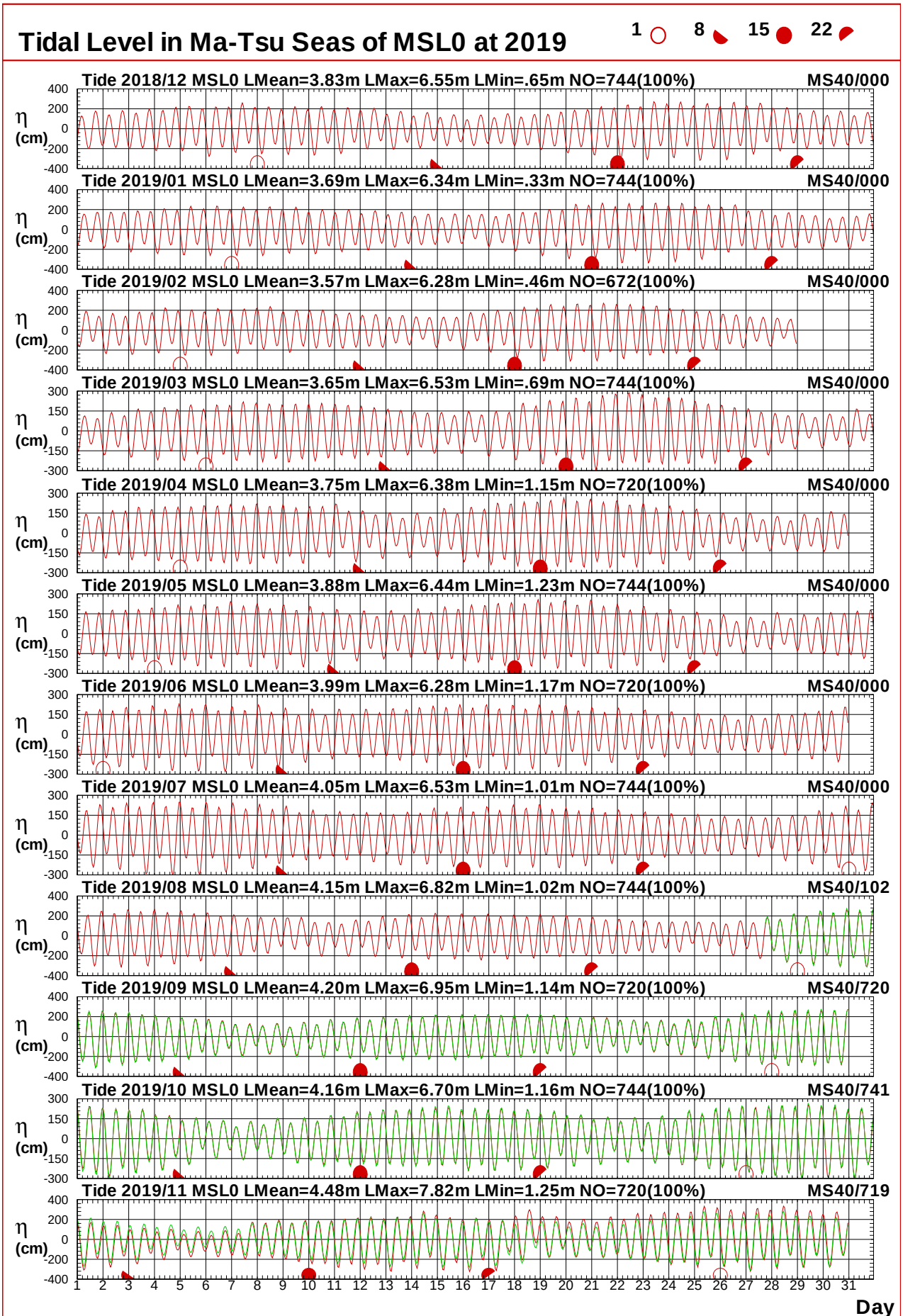


圖3.5.9　2019年每月馬祖海域 L 站與4站潮位比較圖

T18CMSL0.1HA T18CMS40.1H0 T191MSL0.1HA T191MS40.1H0 T192MSL0.1HA T192MS40.1H0
T193MSL0.1HA T193MS40.1H0 T194MSL0.1HA T194MS40.1H0 T195MSL0.1HA T195MS40.1H0

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第四章　2019 年馬祖海域觀測海流資料年報

2019 年馬祖海域海流之觀測包括**測站 X 、測站 Y、測站 A、測站 2、測站 3 及測站 4 等 6** 個測站(測站位置如第 O 章圖 CU1，各測站歷年觀測海流資料蒐集概況如表 CU1)。

本年報利用調和分析方法**觀測海流可分解為:**

(1)計算潮流(包括平均流)。

(2)計算殘(餘)流(或稱非潮流)。

4.1　2019 年馬祖海域觀測海流資料年報圖表

本章第 1 節**海流**年報資料處理之統計表包括:

1. 表 4.1.1a　2019 年**各觀測站**每月**觀測海流**資料記錄表。
2. 表 4.1.1b　2019 年**各觀測站**每月**計算潮流**資料記錄表。

本章第 2 節海流年報資料處理之統計表包括:

1. 2019 年**各觀測站**每月**觀測**流速及流向重要統計量統計表。
2. 2019 年**各觀測站**每月**計算潮流**流速及流向重要統計量統計表。
3. 2019 年**各觀測站**每月**計算殘(餘)流**流速及流向重要統計量統計表。

本章第 3 節海流年報資料處理之統計圖包括:

1. 2019 年**各觀測站**之**觀測海流**與**計算潮流**歷線比較圖。
2. 2019 年**各觀測站**之**觀測海流**與**計算殘(餘)流**歷線比較圖。

本章第 4 節海流年報資料處理之統計圖包括:2019 年**各觀測站**之**觀測海流、計算潮流**及**計算殘流**等 3 個向量分佈圖。

本章第 5 節海流年報資料處理之統計圖包括:2019 年**各觀測站**之**觀測海流、計算潮流**及**計算殘流**等 3 個向量行進圖。

表4.1.1a 2019年每月馬祖海域各測站觀測海流資料紀錄表

海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域
年月/測站	X	Y	A	4	2	3						
2018/12 月	733(98.5%)	578(77.7%)	742(99.7%)	*	739(99.3%)	*	*	*	*	*	*	*
2019/ 1 月	737(99.1%)	451(60.6%)	732(98.4%)	*	10(1.3%)	*	*	*	*	*	*	*
2019/ 2 月	408(60.7%)	611(90.9%)	639(95.1%)	*	182(27.1%)	*	*	*	*	*	*	*
2019/ 3 月	728(97.8%)	686(92.2%)	743(99.9%)	*	740(99.5%)	*	*	*	*	*	*	*
2019/ 4 月	639(88.8%)	609(84.6%)	372(51.7%)	*	711(98.8%)	*	*	*	*	*	*	*
2019/ 5 月	741(99.6%)	732(98.4%)	*	*	741(99.6%)	*	*	*	*	*	*	*
2019/ 6 月	707(98.2%)	655(91.0%)	*	*	719(99.9%)	*	*	*	*	*	*	*
2019/ 7 月	738(99.2%)	644(86.6%)	*	*	744(100%)	*	*	*	*	*	*	*
2019/ 8 月	617(82.9%)	704(94.6%)	53(7.1%)	102(13.7%)	694(93.3%)	218(29.3%)	*	*	*	*	*	*
2019/ 9 月	705(97.9%)	455(63.2%)	684(95.0%)	720(100%)	717(99.6%)	719(99.9%)	*	*	*	*	*	*
2019/10 月	736(98.9%)	646(86.8%)	735(98.8%)	741(99.6%)	678(91.1%)	738(99.2%)	*	*	*	*	*	*
2019/11 月	714(99.2%)	644(89.4%)	716(99.4%)	719(99.9%)	696(96.7%)	718(99.7%)	*	*	*	*	*	*
2019/冬季	1878(86.9%)	1640(75.9%)	2113(97.8%)	*	931(43.1%)	*	*	*	*	*	*	*
2019/春季	2108(95.5%)	2027(91.8%)	1115(50.5%)	*	2192(99.3%)	*	*	*	*	*	*	*
2019/夏季	2062(93.4%)	2003(90.7%)	53(2.4%)	102(4.6%)	2157(97.7%)	218(9.9%)	*	*	*	*	*	*
2019/秋季	2155(98.7%)	1745(79.9%)	2135(97.8%)	2180(99.8%)	2091(95.7%)	2175(99.6%)	*	*	*	*	*	*
2019/整年	8203(93.6%)	7415(84.6%)	5416(61.8%)	2282(26.1%)	7371(84.1%)	2393(27.3%)	*	*	*	*	*	*
起始年月	2018/12	2018/12	2018/12	2019/08	2018/12	2019/08	*	*	*	*	*	*
結束年月	2019/11	2019/11	2019/11	2019/11	2019/11	2019/11	*	*	*	*	*	*

表4.1.1b 2019年每月馬祖海域計算潮流各測站資料紀錄表

海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域	馬祖海域
年月/測站	X	Y	A	4	2	3						
2018/12 月	744(100%)	744(100%)	744(100%)	744(100%)	744(100%)	744(100%)	*	*	*	*	*	*
2019/ 1 月	744(100%)	744(100%)	744(100%)	744(100%)	744(100%)	744(100%)	*	*	*	*	*	*
2019/ 2 月	672(100%)	672(100%)	672(100%)	672(100%)	672(100%)	672(100%)	*	*	*	*	*	*
2019/ 3 月	744(100%)	744(100%)	744(100%)	744(100%)	744(100%)	744(100%)	*	*	*	*	*	*
2019/ 4 月	720(100%)	720(100%)	720(100%)	720(100%)	720(100%)	720(100%)	*	*	*	*	*	*
2019/ 5 月	744(100%)	744(100%)	744(100%)	744(100%)	744(100%)	744(100%)	*	*	*	*	*	*
2019/ 6 月	720(100%)	720(100%)	720(100%)	720(100%)	720(100%)	720(100%)	*	*	*	*	*	*
2019/ 7 月	744(100%)	744(100%)	744(100%)	744(100%)	744(100%)	744(100%)	*	*	*	*	*	*
2019/ 8 月	744(100%)	744(100%)	744(100%)	744(100%)	744(100%)	744(100%)	*	*	*	*	*	*
2019/ 9 月	720(100%)	720(100%)	720(100%)	720(100%)	720(100%)	720(100%)	*	*	*	*	*	*
2019/10 月	744(100%)	744(100%)	744(100%)	744(100%)	744(100%)	744(100%)	*	*	*	*	*	*
2019/11 月	720(100%)	720(100%)	720(100%)	720(100%)	720(100%)	720(100%)	*	*	*	*	*	*
2019/冬季	2160(100%)	2160(100%)	2160(100%)	2160(100%)	2160(100%)	2160(100%)	*	*	*	*	*	*
2019/春季	2208(100%)	2208(100%)	2208(100%)	2208(100%)	2208(100%)	2208(100%)	*	*	*	*	*	*
2019/夏季	2208(100%)	2208(100%)	2208(100%)	2208(100%)	2208(100%)	2208(100%)	*	*	*	*	*	*
2019/秋季	2184(100%)	2184(100%)	2184(100%)	2184(100%)	2184(100%)	2184(100%)	*	*	*	*	*	*
2019/整年	8760(100%)	8760(100%)	8760(100%)	8760(100%)	8760(100%)	8760(100%)	*	*	*	*	*	*
起始年月	2018/12	2018/12	2018/12	2018/12	2018/12	2018/12	*	*	*	*	*	*
結束年月	2019/11	2019/11	2019/11	2019/11	2019/11	2019/11	*	*	*	*	*	*

4.2　2019 年馬祖海域各測站觀測海流與計算潮流(殘流)統計量統計表

表4.2.1a　2019年馬祖海域 X 站觀測流速及流向重要統計量統計表

序號	日期 (年/月)	觀測點數	流速平均值 (cm/s)	平均流 流速/流向 (cm/s)/(來向)	最大流 流速/流向 (cm/s)/(來向)	1/2節流 <25.7 (%)	1節流 ~51.4 (%)	2節流 ~103 (%)	大流 >103 (%)	流向 N~E (%)	流向 E~S (%)	流向 S~W (%)	流向 W~N (%)	主要流向 方向/百分比
1	2018/12	733(99%)	16.8	10.3/WSW	59.8/SW	78.6	20.2	1.2	.0	12.7	16.1	59.5	11.7	WSW/28.8%
2	2019/01	737(99%)	16.5	11.1/WSW	59.2/SW	79.5	19.4	1.1	.0	13.8	12.9	61.6	11.7	WSW/28.9%
3	2019/02	408(61%)	15.4	8.0/WSW	59.8/WSW	81.6	17.4	1.0	.0	18.9	17.6	51.5	12.0	WSW/27.2%
4	2019/03	728(98%)	17.7	5.7/WSW	70.7/WSW	76.5	21.4	2.1	.0	24.6	14.7	45.6	15.1	WSW/19.2%
5	2019/04	639(89%)	18.0	3.3/W	63.8/NE	76.4	21.3	2.3	.0	26.3	12.8	40.4	20.5	WSW/15.6%
6	2019/05	741(100%)	15.2	4.1/WSW	71.9/WSW	86.2	13.0	.8	.0	22.9	14.6	38.9	23.6	WSW/13.1%
7	2019/06	707(98%)	23.0	2.2/W	74.0/NE	62.4	32.5	5.1	.0	33.7	11.5	42.7	12.2	SW /14.7%
8	2019/07	738(99%)	25.1	9.4/NNE	71.5/WSW	58.3	34.3	7.5	.0	45.7	11.0	18.3	25.1	NNE/16.0%
9	2019/08	617(83%)	22.2	4.8/NW	77.7/WSW	66.3	28.2	5.5	.0	29.3	13.6	34.5	22.5	WSW/15.1%
10	2019/09	705(98%)	18.4	10.6/SW	75.0/WSW	73.3	24.8	1.8	.0	16.3	16.6	52.9	14.2	WSW/20.1%
11	2019/10	736(99%)	16.4	7.3/WSW	60.5/WSW	81.1	17.4	1.5	.0	21.5	14.8	46.7	17.0	WSW/18.5%
12	2019/11	714(99%)	13.2	6.0/SW	58.8/SSW	89.8	9.4	.8	.0	16.5	22.8	45.8	14.8	SW /14.7%
13	2019/冬	1878(87%)	16.4	10.1/WSW	59.8/SW	79.6	19.3	1.1	.0	14.5	15.2	58.6	11.8	WSW/28.5%
14	2019/春	2108(96%)	16.9	4.3/WSW	71.9/WSW	79.9	18.4	1.7	.0	24.5	14.1	41.7	19.7	WSW/16.0%
15	2019/夏	2062(93%)	23.5	4.3/NNW	77.7/WSW	62.1	31.9	6.1	.0	36.7	11.9	31.5	19.9	NNE/12.0%
16	2019/秋	2155(99%)	16.0	7.9/SW	75.0/WSW	81.4	17.2	1.4	.0	18.1	18.1	48.4	15.4	WSW/17.4%
17	2019/年	8203(94%)	18.2	5.2/WSW	77.7/WSW	75.8	21.7	2.6	.0	23.6	14.8	44.8	16.8	WSW/17.9%

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表4.2.1b　2019年馬祖海域 X 站潮流流速及流向重要統計量統計表

序號	日期 (年/月)	觀測點數	流速平均值 (cm/s)	平均流流速/流向 (cm/s)/(來向)	最大流流速/流向 (cm/s)/(來向)	1/2節流 <25.7 (%)	1節流 ~51.4 (%)	2節流 ~103 (%)	大流 >103 (%)	流向 N~E (%)	流向 E~S (%)	流向 S~W (%)	流向 W~N (%)	主要流向方向/百分比
1	2018/12	744(100%)	7.4	5.2/WSW	20.2/WSW	100.0	.0	.0	.0	16.8	11.2	67.6	4.4	WSW/45.8%
2	2019/01	744(100%)	7.4	5.2/WSW	20.3/WSW	100.0	.0	.0	.0	17.2	11.6	64.4	6.9	WSW/41.1%
3	2019/02	672(100%)	7.5	5.2/WSW	19.8/WSW	100.0	.0	.0	.0	18.9	11.3	63.4	6.4	WSW/39.4%
4	2019/03	744(100%)	7.3	5.2/WSW	19.4/WSW	100.0	.0	.0	.0	17.3	12.4	63.6	6.7	WSW/40.3%
5	2019/04	720(100%)	7.3	5.2/WSW	19.9/WSW	100.0	.0	.0	.0	17.1	11.5	67.2	4.2	WSW/44.2%
6	2019/05	744(100%)	7.3	5.2/WSW	19.8/WSW	100.0	.0	.0	.0	16.9	11.6	68.3	3.2	WSW/46.9%
7	2019/06	720(100%)	7.4	5.2/WSW	19.4/WSW	100.0	.0	.0	.0	18.3	9.4	68.5	3.8	WSW/44.4%
8	2019/07	744(100%)	7.5	5.2/WSW	19.6/WSW	100.0	.0	.0	.0	18.1	10.6	63.4	7.8	WSW/41.3%
9	2019/08	744(100%)	7.6	5.2/WSW	19.9/WSW	100.0	.0	.0	.0	19.0	11.4	62.1	7.5	WSW/40.1%
10	2019/09	720(100%)	7.5	5.2/WSW	19.8/WSW	100.0	.0	.0	.0	18.6	12.4	62.8	6.3	WSW/41.1%
11	2019/10	744(100%)	7.5	5.2/WSW	20.0/WSW	100.0	.0	.0	.0	18.3	12.2	64.1	5.4	WSW/45.6%
12	2019/11	720(100%)	7.4	5.2/WSW	20.1/WSW	100.0	.0	.0	.0	17.8	11.7	66.4	4.2	WSW/45.4%
13	2019/冬	2160(100%)	7.4	5.2/WSW	20.3/WSW	100.0	.0	.0	.0	17.6	11.3	65.2	5.9	WSW/42.2%
14	2019/春	2208(100%)	7.3	5.2/WSW	19.9/WSW	100.0	.0	.0	.0	17.1	11.8	66.3	4.7	WSW/43.8%
15	2019/夏	2208(100%)	7.5	5.2/WSW	19.9/WSW	100.0	.0	.0	.0	18.5	10.5	64.6	6.4	WSW/41.9%
16	2019/秋	2184(100%)	7.4	5.2/WSW	20.1/WSW	100.0	.0	.0	.0	18.2	12.1	64.4	5.3	WSW/44.0%
17	2019/年	8760(100%)	7.4	5.2/WSW	20.3/WSW	100.0	.0	.0	.0	17.9	11.4	65.1	5.6	WSW/43.0%

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表4.2.1c　2019年馬祖海域 X 站殘流流速及流向重要統計量統計表

序號	日期 (年/月)	觀測點數	流速平均值 (cm/s)	平均流 流速/流向 (cm/s)/(來向)	最大流 流速/流向 (cm/s)/(來向)	1/2節流 <25.7 (%)	1節流 ~51.4 (%)	2節流 ~103 (%)	大流 >103 (%)	流向 N~E (%)	流向 E~S (%)	流向 S~W (%)	流向 W~N (%)	主要流向 方向/百分比
1	2018/12	733(99%)	13.1	5.3/SW	60.3/E	89.1	10.6	.3	.0	20.3	15.6	52.9	11.2	WSW/18.6%
2	2019/01	737(99%)	12.8	6.1/SW	58.6/ENE	90.6	9.2	.1	.0	21.4	14.7	51.4	12.5	WSW/18.5%
3	2019/02	408(61%)	12.3	3.1/SW	50.0/SW	90.9	9.1	.0	.0	31.9	18.1	41.9	8.1	WSW/16.4%
4	2019/03	728(98%)	15.7	.7/SSW	69.6/NE	83.2	14.4	2.3	.0	32.1	16.8	37.5	13.6	WSW/12.1%
5	2019/04	639(89%)	16.5	2.2/NE	70.0/NE	82.2	15.5	2.3	.0	37.6	16.0	30.5	16.0	NE /12.4%
6	2019/05	741(100%)	13.6	1.2/E	60.0/WSW	91.9	7.8	.3	.0	35.8	19.8	26.6	17.8	E /12.6%
7	2019/06	707(98%)	22.4	3.4/NE	84.7/NE	67.8	25.9	6.4	.0	39.9	11.9	37.1	11.2	NE /12.7%
8	2019/07	738(99%)	26.7	13.1/NE	78.3/NE	56.1	33.9	10.0	.0	53.9	9.2	15.9	21.0	NE /20.6%
9	2019/08	617(83%)	20.4	5.3/NNE	76.5/E	73.4	21.7	4.9	.0	39.4	15.1	27.7	17.8	NNE/10.7%
10	2019/09	705(98%)	14.6	5.7/SW	66.7/WSW	84.5	15.2	.3	.0	23.7	18.9	44.5	12.9	WSW/14.0%
11	2019/10	736(99%)	13.2	2.3/SW	67.9/NE	89.0	10.5	.5	.0	33.3	16.3	37.0	13.5	ENE/13.2%
12	2019/11	714(99%)	10.9	3.2/SSE	53.5/S	94.7	5.2	.1	.0	28.7	32.4	28.4	10.5	E /11.8%
13	2019/冬	1878(87%)	12.8	5.1/SW	60.3/E	90.1	9.7	.2	.0	23.3	15.8	49.9	11.0	WSW/18.1%
14	2019/春	2108(96%)	15.2	.9/ENE	70.0/NE	86.0	12.4	1.6	.0	35.1	17.6	31.5	15.8	ENE/10.3%
15	2019/夏	2062(93%)	23.3	7.3/NNE	84.7/NE	65.3	27.5	7.2	.0	44.8	11.9	26.7	16.7	NE /14.7%
16	2019/秋	2155(99%)	12.9	3.3/SSW	67.9/NE	89.4	10.3	.3	.0	28.6	22.5	36.6	12.3	SW /11.2%
17	2019/年	8203(94%)	16.1	.0/ENE	84.7/NE	82.6	15.0	2.4	.0	33.1	17.0	35.9	14.0	SW /11.4%

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表4.2.2a　2019年馬祖海域 Y 站觀測流速及流向重要統計量統計表

序號	日期 (年/月)	觀測點數	流速平均值 (cm/s)	平均流 流速/流向 (cm/s)/(來向)	最大流 流速/流向 (cm/s)/(來向)	1/2節流 <25.7 (%)	1節流 ~51.4 (%)	2節流 ~103 (%)	大流 >103 (%)	流向 N~E (%)	流向 E~S (%)	流向 S~W (%)	流向 W~N (%)	主要流向 方向/百分比
1	2018/12	578(78%)	51.5	18.8/SSW	181.4/SSW	24.2	31.7	36.5	7.6	25.6	17.8	46.0	10.6	SW /18.5%
2	2019/01	451(61%)	47.9	17.7/SSW	145.8/SW	23.5	35.3	37.9	3.3	26.6	13.5	50.8	9.1	SW /23.1%
3	2019/02	611(91%)	42.8	4.3/S	110.3/WSW	28.5	35.7	35.2	.7	36.0	8.8	38.1	17.0	ENE/16.9%
4	2019/03	686(92%)	38.5	4.4/ESE	143.5/E	31.2	45.5	22.4	.9	37.9	8.9	37.5	15.7	E /15.7%
5	2019/04	609(85%)	33.2	3.1/NE	117.0/E	42.7	41.4	14.9	1.0	38.8	10.8	30.0	20.4	ENE/14.6%
6	2019/05	732(98%)	42.7	.8/NNW	109.4/E	26.4	38.1	35.0	.5	38.9	5.3	39.8	16.0	ENE/17.3%
7	2019/06	655(91%)	43.1	14.9/NE	120.6/ENE	30.1	36.8	31.1	2.0	48.4	7.3	20.3	24.0	ENE/24.6%
8	2019/07	644(87%)	47.2	33.3/ENE	136.5/ENE	26.9	33.9	35.2	4.0	67.5	5.0	10.1	17.4	ENE/33.5%
9	2019/08	704(95%)	43.7	22.6/NE	121.2/ENE	26.8	38.5	33.0	1.7	54.8	6.7	13.6	24.9	ENE/20.9%
10	2019/09	455(63%)	42.2	5.4/WNW	133.5/SW	25.7	42.0	30.8	1.5	37.6	7.3	33.0	22.2	ENE/14.3%
11	2019/10	646(87%)	44.0	7.4/W	133.5/WSW	28.9	36.2	31.7	3.1	33.7	7.1	33.7	25.4	ENE/12.7%
12	2019/11	644(89%)	40.2	10.0/SW	128.2/SW	32.9	37.3	28.7	1.1	29.7	10.4	41.8	18.2	WSW/14.3%
13	2019/冬	1640(76%)	47.2	13.1/SSW	181.4/SSW	25.6	34.1	36.4	3.8	29.8	13.3	44.4	12.6	SW /17.2%
14	2019/春	2027(92%)	38.4	2.0/E	143.5/E	32.9	41.6	24.7	.8	38.5	8.2	36.1	17.2	ENE/15.9%
15	2019/夏	2003(91%)	44.6	23.3/NE	136.5/ENE	27.9	36.4	33.1	2.5	56.8	6.3	14.7	22.2	ENE/26.2%
16	2019/秋	1745(80%)	42.1	6.4/WSW	133.5/SW	29.6	38.1	30.4	1.9	33.2	8.4	36.5	21.9	WSW/12.6%
17	2019/年	7415(85%)	42.9	3.1/ENE	181.4/SSW	29.2	37.7	30.9	2.2	40.3	8.9	32.2	18.6	ENE/17.3%

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表4.2.2b　2019年馬祖海域 Y 站潮流流速及流向重要統計量統計表

序號	日期 (年/月)	觀測點數	流速平均值 (cm/s)	平均流流速/流向 (cm/s)/(來向)	最大流流速/流向 (cm/s)/(來向)	1/2節流 <25.7 (%)	1節流 ~51.4 (%)	2節流 ~103 (%)	大流 >103 (%)	流向 N~E (%)	流向 E~S (%)	流向 S~W (%)	流向 W~N (%)	主要流向方向/百分比
1	2018/12	744(100%)	26.6	3.2/ENE	59.4/ENE	50.8	47.3	1.9	.0	40.9	12.1	36.0	11.0	ENE/20.8%
2	2019/01	744(100%)	26.5	3.1/ENE	60.5/ENE	50.7	47.3	2.0	.0	40.2	12.1	36.4	11.3	ENE/20.7%
3	2019/02	672(100%)	26.8	3.2/ENE	60.2/ENE	50.3	46.7	3.0	.0	40.6	12.4	35.9	11.2	ENE/20.8%
4	2019/03	744(100%)	26.2	3.1/ENE	58.0/ENE	52.4	45.3	2.3	.0	41.1	11.4	35.8	11.7	ENE/20.8%
5	2019/04	720(100%)	26.2	3.1/ENE	58.9/ENE	51.3	46.5	2.2	.0	40.3	12.4	35.6	11.8	ENE/20.6%
6	2019/05	744(100%)	25.9	3.1/ENE	57.7/ENE	53.8	44.4	1.9	.0	41.1	11.4	36.2	11.3	ENE/20.8%
7	2019/06	720(100%)	26.2	3.1/ENE	56.5/ENE	51.3	46.9	1.8	.0	41.3	11.1	36.4	11.3	ENE/21.3%
8	2019/07	744(100%)	26.7	3.1/ENE	59.0/ENE	50.5	47.6	1.9	.0	40.7	12.1	35.3	11.8	ENE/20.8%
9	2019/08	744(100%)	27.3	3.1/ENE	59.3/ENE	48.0	49.3	2.7	.0	40.6	11.8	36.0	11.6	ENE/20.8%
10	2019/09	720(100%)	27.2	3.1/ENE	58.1/ENE	47.2	49.6	3.2	.0	40.0	12.9	35.8	11.3	ENE/21.4%
11	2019/10	744(100%)	27.4	3.2/ENE	60.2/ENE	47.6	50.0	2.4	.0	40.6	11.8	36.0	11.6	ENE/21.1%
12	2019/11	720(100%)	26.8	3.2/ENE	60.1/ENE	49.3	48.8	1.9	.0	40.7	12.5	35.0	11.8	ENE/20.7%
13	2019/冬	2160(100%)	26.6	3.1/ENE	60.5/ENE	50.6	47.1	2.3	.0	40.6	12.2	36.1	11.2	ENE/20.8%
14	2019/春	2208(100%)	26.1	3.1/ENE	58.9/ENE	52.5	45.4	2.1	.0	40.9	11.7	35.8	11.6	ENE/20.7%
15	2019/夏	2208(100%)	26.8	3.1/ENE	59.3/ENE	49.9	48.0	2.1	.0	40.9	11.7	35.9	11.5	ENE/21.0%
16	2019/秋	2184(100%)	27.2	3.2/ENE	60.2/ENE	48.0	49.5	2.5	.0	40.4	12.4	35.6	11.5	ENE/21.1%
17	2019/年	8760(100%)	26.7	3.1/ENE	60.5/ENE	50.3	47.5	2.3	.0	40.7	12.0	35.9	11.5	ENE/20.9%

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表4.2.2c　2019年馬祖海域 Y 站殘流流速及流向重要統計量統計表

序號	日期 (年/月)	觀測點數	流速平均值 (cm/s)	平均流 流速/流向 (cm/s)/(來向)	最大流 流速/流向 (cm/s)/(來向)	1/2節流 <25.7 (%)	1節流 ~51.4 (%)	2節流 ~103 (%)	大流 >103 (%)	流向 N~E (%)	流向 E~S (%)	流向 S~W (%)	流向 W~N (%)	主要流向 方向/百分比
1	2018/12	578(78%)	40.8	21.1/SSW	177.4/SSW	34.6	39.6	20.2	5.5	19.9	21.5	50.2	8.5	SW /20.2%
2	2019/01	451(61%)	37.3	18.7/SSW	124.3/SW	40.8	36.4	20.8	2.0	19.7	23.9	47.7	8.6	SW /20.4%
3	2019/02	611(91%)	34.1	4.8/SSW	112.6/SW	41.6	38.0	20.1	.3	30.8	19.8	31.8	17.7	WSW/12.4%
4	2019/03	686(92%)	33.2	3.4/ESE	119.3/E	37.0	48.7	13.8	.4	34.3	16.8	35.0	14.0	E /15.0%
5	2019/04	609(85%)	30.8	4.7/NE	103.2/ENE	44.5	44.8	10.5	.2	39.6	12.0	26.9	21.5	ENE/16.7%
6	2019/05	732(98%)	38.0	2.8/W	101.3/WSW	28.1	46.7	25.1	.0	35.0	8.7	35.4	20.9	WSW/15.0%
7	2019/06	655(91%)	40.0	11.8/NE	100.2/NE	28.4	43.5	28.1	.0	45.6	5.3	23.7	25.3	ENE/18.9%
8	2019/07	644(87%)	43.8	30.0/NE	112.1/ENE	23.3	42.2	33.9	.6	68.5	5.7	9.6	16.1	ENE/31.4%
9	2019/08	704(95%)	39.7	19.9/NNE	89.6/ENE	27.0	46.2	26.8	.0	56.7	5.3	15.8	22.3	NE /17.8%
10	2019/09	455(63%)	38.8	8.6/W	118.8/SW	31.0	41.8	26.6	.7	32.1	8.8	36.0	23.1	WSW/13.8%
11	2019/10	646(87%)	39.6	9.4/W	120.0/SW	32.4	41.6	24.6	1.4	31.9	8.5	35.1	24.5	WSW/11.8%
12	2019/11	644(89%)	33.1	10.3/SW	109.1/SW	43.3	40.1	15.8	.8	28.3	16.9	36.3	18.5	SW /12.6%
13	2019/冬	1640(76%)	37.3	14.4/SSW	177.4/SSW	38.9	38.1	20.4	2.6	23.9	21.5	42.6	12.0	SW /16.6%
14	2019/春	2027(92%)	34.2	1.1/ENE	119.3/E	36.1	46.8	16.9	.2	36.1	12.4	32.7	18.7	ENE/14.0%
15	2019/夏	2003(91%)	41.1	20.2/NE	112.1/ENE	26.3	44.0	29.5	.2	56.9	5.4	16.4	21.3	ENE/21.9%
16	2019/秋	1745(80%)	37.0	8.7/WSW	120.0/SW	36.0	41.1	21.9	1.0	30.6	11.7	35.8	21.9	WSW/12.5%
17	2019/年	7415(85%)	37.4	1.0/ENE	177.4/SSW	34.0	42.8	22.3	.9	37.7	12.4	31.2	18.7	ENE/14.1%

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表4.2.3a　2019年馬祖海域 A 站觀測流速及流向重要統計量統計表

序號	日期 (年/月)	觀測點數	流速平均值 (cm/s)	平均流流速/流向 (cm/s)/(來向)	最大流流速/流向 (cm/s)/(來向)	1/2節流 <25.7 (%)	1節流 ~51.4 (%)	2節流 ~103 (%)	大流 >103 (%)	流向 N~E (%)	流向 E~S (%)	流向 S~W (%)	流向 W~N (%)	主要流向 方向/百分比
1	2018/12	742(100%)	42.1	26.8/S	105.0/S	29.4	33.0	37.5	.1	12.8	26.1	46.0	15.1	S /49.3%
2	2019/01	732(98%)	40.6	26.0/S	99.5/S	30.1	34.7	35.2	.0	13.4	24.0	48.2	14.3	S /45.5%
3	2019/02	639(95%)	41.5	24.1/S	115.2/S	31.0	32.6	35.8	.6	13.5	27.9	42.4	16.3	S /48.5%
4	2019/03	743(100%)	35.9	20.6/S	103.5/S	37.7	38.2	24.0	.1	16.4	30.0	40.8	12.8	S /40.8%
5	2019/04	372(52%)	32.5	18.1/S	94.2/S	41.4	39.5	19.1	.0	21.0	25.5	44.9	8.6	S /42.2%
6	2019/05													
7	2019/06													
8	2019/07													
9	2019/08	53(7%)	30.6	14.6/W	80.6/WSW	50.9	35.8	13.2	.0	20.8	18.9	39.6	20.8	W /28.3%
10	2019/09	684(95%)	27.4	14.3/WSW	90.7/W	53.1	36.7	10.2	.0	10.8	26.2	49.3	13.7	W /28.1%
11	2019/10	735(99%)	22.7	15.9/SW	69.5/WSW	62.7	34.3	3.0	.0	6.9	18.6	64.8	9.7	WSW/24.8%
12	2019/11	716(99%)	21.4	10.7/SW	72.8/WSW	68.3	29.6	2.1	.0	11.9	27.9	52.0	8.2	WSW/20.0%
13	2019/冬	2113(98%)	41.4	25.7/S	115.2/S	30.1	33.5	36.2	.2	13.2	25.9	45.7	15.2	S /47.8%
14	2019/春	1115(51%)	34.7	19.8/S	103.5/S	38.9	38.7	22.3	.1	17.9	28.5	42.2	11.4	S /41.3%
15	2019/夏	53(2%)	30.6	14.6/W	80.6/WSW	50.9	35.8	13.2	.0	20.8	18.9	39.6	20.8	W /28.3%
16	2019/秋	2135(98%)	23.8	13.6/SW	90.7/W	61.5	33.5	5.0	.0	9.8	24.2	55.5	10.5	WSW/20.8%
17	2019/年	5416(62%)	33.0	17.8/SSW	115.2/S	44.5	34.6	20.8	.1	12.9	25.7	48.8	12.6	S /29.0%

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表4.2.3b　2019年馬祖海域 A 站潮流流速及流向重要統計量統計表

序號	日期 (年/月)	觀測點數	流速平均值 (cm/s)	平均流流速/流向 (cm/s)/(來向)	最大流流速/流向 (cm/s)/(來向)	1/2節流 <25.7 (%)	1節流 ~51.4 (%)	2節流 ~103 (%)	大流 >103 (%)	流向 N~E (%)	流向 E~S (%)	流向 S~W (%)	流向 W~N (%)	主要流向 方向/百分比
1	2018/12	744(100%)	23.3	17.9/SSW	59.5/S	59.1	38.3	2.6	.0	5.9	21.6	54.3	18.1	S /33.5%
2	2019/01	744(100%)	23.3	17.8/SSW	60.2/SSW	58.9	38.4	2.7	.0	5.6	20.3	56.2	17.9	S /32.1%
3	2019/02	672(100%)	23.4	17.8/SSW	59.1/S	58.6	38.1	3.3	.0	6.1	18.5	56.1	19.3	S /33.3%
4	2019/03	744(100%)	23.2	17.8/SSW	57.8/SSW	59.7	38.0	2.3	.0	5.0	21.2	56.0	17.7	S /32.7%
5	2019/04	720(100%)	23.2	17.8/SSW	55.5/S	59.4	38.3	2.2	.0	5.0	21.0	55.0	19.0	S /32.6%
6	2019/05	744(100%)	23.1	17.8/SSW	55.6/S	59.3	39.2	1.5	.0	5.0	22.0	54.4	18.5	S /35.1%
7	2019/06	720(100%)	23.2	17.8/SSW	56.7/S	60.0	37.6	2.4	.0	5.6	20.8	55.3	18.3	S /34.4%
8	2019/07	744(100%)	23.3	17.8/SSW	58.4/S	59.3	37.6	3.1	.0	6.5	19.5	55.6	18.4	S /33.2%
9	2019/08	744(100%)	23.6	17.8/SSW	59.7/S	58.9	38.0	3.1	.0	6.7	19.4	55.8	18.1	S /32.7%
10	2019/09	720(100%)	23.5	17.8/SSW	59.3/SSW	58.2	39.2	2.6	.0	5.8	19.4	55.0	19.7	S /31.5%
11	2019/10	744(100%)	23.6	17.8/SSW	56.3/S	58.7	38.6	2.7	.0	5.4	21.0	54.4	19.2	S /31.3%
12	2019/11	720(100%)	23.4	17.8/SSW	57.2/S	59.4	38.1	2.5	.0	5.3	21.4	54.4	18.9	S /33.8%
13	2019/冬	2160(100%)	23.3	17.8/SSW	60.2/SSW	58.9	38.3	2.8	.0	5.9	20.2	55.5	18.4	S /33.0%
14	2019/春	2208(100%)	23.2	17.8/SSW	57.8/SSW	59.5	38.5	2.0	.0	5.0	21.4	55.2	18.4	S /33.5%
15	2019/夏	2208(100%)	23.4	17.8/SSW	59.7/S	59.4	37.8	2.9	.0	6.3	19.9	55.6	18.3	S /33.4%
16	2019/秋	2184(100%)	23.5	17.8/SSW	59.3/SSW	58.8	38.6	2.6	.0	5.5	20.6	54.6	19.3	S /32.2%
17	2019/年	8760(100%)	23.4	17.8/SSW	60.2/SSW	59.1	38.3	2.6	.0	5.7	20.5	55.2	18.6	S /33.0%

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表4.2.3c　2019年馬祖海域 A 站殘流流速及流向重要統計量統計表

序號	日期 (年/月)	觀測點數	流速平均值 (cm/s)	平均流流速/流向 (cm/s)/(來向)	最大流流速/流向 (cm/s)/(來向)	1/2節流 <25.7 (%)	1節流 ~51.4 (%)	2節流 ~103 (%)	大流 >103 (%)	流向 N~E (%)	流向 E~S (%)	流向 S~W (%)	流向 W~N (%)	主要流向 方向/百分比
1	2018/12	742(100%)	26.6	10.3/SSE	81.3/NNW	52.2	42.2	5.7	.0	23.2	37.3	28.7	10.8	S /20.9%
2	2019/01	732(98%)	24.3	9.4/SSE	71.7/N	57.8	39.1	3.1	.0	22.3	35.2	32.0	10.5	SSW/18.9%
3	2019/02	639(95%)	24.8	8.3/SSE	70.7/SSE	58.1	37.1	4.9	.0	24.3	37.7	28.2	9.9	S /18.6%
4	2019/03	743(100%)	22.4	6.2/SE	93.3/ENE	65.9	30.0	4.0	.0	29.2	33.5	25.0	12.2	S /12.0%
5	2019/04	372(52%)	20.3	5.6/E	86.1/ENE	74.2	23.9	1.9	.0	37.4	30.4	21.2	11.0	N /12.4%
6	2019/05													
7	2019/06													
8	2019/07													
9	2019/08	53(7%)	48.0	18.3/NNW	86.3/W	11.3	41.5	47.2	.0	39.6	7.5	30.2	22.6	NNE/15.1%
10	2019/09	684(95%)	38.3	13.1/NW	95.6/WSW	24.0	53.2	22.8	.0	35.7	8.6	27.6	28.1	WSW/11.8%
11	2019/10	735(99%)	32.1	11.2/NW	73.6/NNE	34.8	55.6	9.5	.0	30.3	5.6	35.9	28.2	SW /12.1%
12	2019/11	716(99%)	33.0	10.6/NNW	75.4/WSW	33.4	54.5	12.2	.0	38.4	9.2	28.8	23.6	WSW/11.0%
13	2019/冬	2113(98%)	25.2	9.4/SSE	81.3/NNW	55.9	39.6	4.5	.0	23.2	36.7	29.7	10.4	S /17.5%
14	2019/春	1115(51%)	21.7	5.9/ESE	93.3/ENE	68.7	28.0	3.3	.0	31.9	32.5	23.8	11.8	N /11.5%
15	2019/夏	53(2%)	48.0	18.3/NNW	86.3/W	11.3	41.5	47.2	.0	39.6	7.5	30.2	22.6	NNE/15.1%
16	2019/秋	2135(98%)	34.4	11.4/NNW	95.6/WSW	30.9	54.5	14.7	.0	34.8	7.8	30.9	26.6	WSW/11.7%
17	2019/年	5416(62%)	28.3	.0/NNW	95.6/WSW	48.2	43.1	8.7	.0	29.7	24.2	28.9	17.2	N /11.4%

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表4.2.4a　2019年馬祖海域2站觀測流速及流向重要統計量統計表

序號	日期 (年/月)	觀測點數	流速平均值 (cm/s)	平均流 流速/流向 (cm/s)/(來向)	最大流 流速/流向 (cm/s)/(來向)	1/2節流 <25.7 (%)	1節流 ~51.4 (%)	2節流 ~103 (%)	大流 >103 (%)	流向 N~E (%)	流向 E~S (%)	流向 S~W (%)	流向 W~N (%)	主要流向 方向/百分比
1	2018/12	739(99%)	19.4	10.1/SE	69.5/SE	75.1	21.8	3.1	.0	5.8	55.5	13.5	25.2	SE /32.5%
2	2019/01	10(1%)	13.8	11.1/SSE	26.5/SE	90.0	10.0	.0	.0	10.0	50.0	40.0	.0	SE /40.0%
3	2019/02	182(27%)	22.4	10.4/SE	77.4/SE	68.1	24.7	7.1	.0	6.6	53.8	11.5	28.0	SE /36.3%
4	2019/03	740(100%)	18.1	8.6/SE	78.4/SE	79.2	18.5	2.3	.0	5.9	54.6	13.9	25.5	SE /28.2%
5	2019/04	711(99%)	18.6	5.7/SE	66.9/NW	75.7	22.8	1.5	.0	9.7	45.4	15.0	29.8	SE /21.5%
6	2019/05	741(100%)	18.1	6.6/SSE	65.6/ESE	78.0	20.8	1.2	.0	8.2	44.7	20.8	26.3	SE /15.9%
7	2019/06	719(100%)	17.5	2.8/ESE	74.5/SE	79.7	18.8	1.5	.0	14.3	37.6	15.6	32.5	SE /12.4%
8	2019/07	744(100%)	20.1	5.0/ESE	77.4/ESE	70.7	26.7	2.6	.0	12.2	44.0	13.6	30.2	ESE/14.1%
9	2019/08	694(93%)	20.9	5.1/SSE	60.5/ESE	68.3	31.0	.7	.0	8.8	41.8	19.2	30.3	SE /14.4%
10	2019/09	717(100%)	19.6	6.6/S	76.5/SE	72.0	27.1	1.0	.0	5.6	37.2	27.9	29.3	SE /17.0%
11	2019/10	678(91%)	19.8	5.4/SSW	70.2/SE	73.0	25.8	1.2	.0	5.6	34.1	28.6	31.7	SE /12.7%
12	2019/11	696(97%)	22.2	14.3/S	83.6/SE	66.2	30.6	3.2	.0	1.7	43.7	38.6	15.9	SSE/21.0%
13	2019/冬	931(43%)	19.9	10.1/SE	77.4/SE	73.9	22.2	3.9	.0	6.0	55.1	13.4	25.5	SE /33.3%
14	2019/春	2192(99%)	18.2	7.0/SE	78.4/SE	77.6	20.7	1.7	.0	7.9	48.3	16.6	27.2	SE /21.9%
15	2019/夏	2157(98%)	19.5	4.0/SE	77.4/ESE	72.9	25.5	1.6	.0	11.8	41.1	16.0	31.0	SE /13.0%
16	2019/秋	2091(96%)	20.5	8.7/S	83.6/SE	70.4	27.8	1.8	.0	4.3	38.4	31.7	25.6	SE /14.4%
17	2019/年	7371(84%)	19.5	6.5/SSE	83.6/SE	73.7	24.3	2.0	.0	7.8	44.2	20.3	27.6	SE /18.6%

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表4.2.4b　2019年馬祖海域2站潮流流速及流向重要統計量統計表

序號	日期 (年/月)	觀測點數	流速平均值 (cm/s)	平均流流速/流向 (cm/s)/(來向)	最大流流速/流向 (cm/s)/(來向)	1/2節流 <25.7 (%)	1節流 ~51.4 (%)	2節流 ~103 (%)	大流 >103 (%)	流向 N~E (%)	流向 E~S (%)	流向 S~W (%)	流向 W~N (%)	主要流向 方向/百分比
1	2018/12	744(100%)	8.6	6.4/SSE	21.3/SE	100.0	.0	.0	.0	.0	62.8	17.1	20.2	SE /29.8%
2	2019/01	744(100%)	8.8	6.4/SSE	21.2/SE	100.0	.0	.0	.0	.0	62.5	15.6	21.9	SE /30.4%
3	2019/02	672(100%)	8.7	6.5/SSE	21.8/SE	100.0	.0	.0	.0	.0	62.5	17.6	19.9	SE /29.9%
4	2019/03	744(100%)	8.9	6.4/SSE	22.3/SE	100.0	.0	.0	.0	.0	62.8	15.6	21.6	SE /30.6%
5	2019/04	720(100%)	8.8	6.5/SSE	22.2/SE	100.0	.0	.0	.0	.0	63.2	15.8	21.0	SSE/30.7%
6	2019/05	744(100%)	8.8	6.5/SSE	21.5/SE	100.0	.0	.0	.0	.0	63.3	16.5	20.2	SSE/29.8%
7	2019/06	720(100%)	8.7	6.5/SSE	21.0/SE	100.0	.0	.0	.0	.0	63.1	16.9	20.0	SSE/29.9%
8	2019/07	744(100%)	8.7	6.5/SSE	21.0/SE	100.0	.0	.0	.0	.0	63.7	16.3	20.0	SSE/30.6%
9	2019/08	744(100%)	8.7	6.5/SSE	22.0/SE	100.0	.0	.0	.0	.0	63.2	16.1	20.7	SSE/30.4%
10	2019/09	720(100%)	8.7	6.5/SSE	22.3/SE	100.0	.0	.0	.0	.0	63.9	15.8	20.3	SSE/29.9%
11	2019/10	744(100%)	8.7	6.5/SSE	22.3/SE	100.0	.0	.0	.0	.0	62.6	17.3	20.0	SSE/31.0%
12	2019/11	720(100%)	8.7	6.5/SSE	21.8/SE	100.0	.0	.0	.0	.0	62.8	17.4	19.9	SSE/30.1%
13	2019/冬	2160(100%)	8.7	6.5/SSE	21.8/SE	100.0	.0	.0	.0	.0	62.6	16.7	20.7	SE /30.0%
14	2019/春	2208(100%)	8.8	6.5/SSE	22.3/SE	100.0	.0	.0	.0	.0	63.1	16.0	20.9	SE /29.5%
15	2019/夏	2208(100%)	8.7	6.5/SSE	22.0/SE	100.0	.0	.0	.0	.0	63.3	16.4	20.2	SSE/30.3%
16	2019/秋	2184(100%)	8.7	6.5/SSE	22.3/SE	100.0	.0	.0	.0	.0	63.1	16.8	20.1	SSE/30.4%
17	2019/年	8760(100%)	8.7	6.5/SSE	22.3/SE	100.0	.0	.0	.0	.0	63.0	16.5	20.5	SSE/29.9%

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表4.2.4c　2019年馬祖海域2站殘流流速及流向重要統計量統計表

序號	日期 (年/月)	觀測點數	流速平均值 (cm/s)	平均流 流速/流向 (cm/s)/(來向)	最大流 流速/流向 (cm/s)/(來向)	1/2節流 <25.7 (%)	1節流 ~51.4 (%)	2節流 ~103 (%)	大流 >103 (%)	流向 N~E (%)	流向 E~S (%)	流向 S~W (%)	流向 W~N (%)	主要流向 方向/百分比
1	2018/12	739(99%)	20.6	4.0/ESE	72.0/NW	70.4	26.9	2.7	.0	7.3	47.4	8.5	36.8	SE /27.3%
2	2019/01	10(1%)	11.7	1.0/WNW	17.0/NNW	100.0	.0	.0	.0	10.0	40.0	10.0	40.0	ESE/20.0%
3	2019/02	182(27%)	24.9	4.9/ESE	79.8/SE	60.4	31.9	7.7	.0	7.1	49.5	8.8	34.6	SE /34.1%
4	2019/03	740(100%)	21.0	3.0/ESE	83.8/SE	67.3	30.4	2.3	.0	6.2	47.3	9.2	37.3	SE /25.9%
5	2019/04	711(99%)	21.0	2.1/NNE	72.4/NW	67.7	29.8	2.5	.0	10.8	39.0	11.7	38.5	SE /17.3%
6	2019/05	741(100%)	19.2	.9/ENE	66.3/ESE	75.8	22.7	1.5	.0	10.9	37.0	15.7	36.4	NW /15.7%
7	2019/06	719(100%)	19.5	4.8/N	74.9/SE	72.6	25.3	2.1	.0	18.5	30.3	10.0	41.2	NNW/14.9%
8	2019/07	744(100%)	23.3	3.8/NNE	87.9/NNW	61.4	33.7	4.8	.0	13.4	38.2	8.5	39.9	NW /15.6%
9	2019/08	694(93%)	23.6	1.5/NW	71.8/NNW	61.7	35.0	3.3	.0	7.9	38.6	15.1	38.3	NW /14.1%
10	2019/09	717(100%)	20.6	3.1/WSW	75.3/NW	70.0	28.0	2.0	.0	8.2	31.7	21.9	38.2	NW /16.5%
11	2019/10	678(91%)	21.6	5.0/W	72.1/NNW	69.9	27.1	2.9	.0	7.8	27.9	21.5	42.8	NW /17.6%
12	2019/11	696(97%)	22.0	9.0/SSW	77.8/SE	67.5	29.9	2.6	.0	1.0	39.2	30.7	29.0	SSE/15.2%
13	2019/冬	931(43%)	21.4	4.2/ESE	79.8/SE	68.7	27.6	3.7	.0	7.3	47.7	8.6	36.4	SE /28.5%
14	2019/春	2192(99%)	20.4	1.7/ENE	83.8/SE	70.3	27.6	2.1	.0	9.3	41.1	12.2	37.4	SE /19.0%
15	2019/夏	2157(98%)	22.1	3.1/N	87.9/NNW	65.2	31.3	3.4	.0	13.4	35.7	11.1	39.8	NW /14.8%
16	2019/秋	2091(96%)	21.4	4.5/SW	77.8/SE	69.2	28.4	2.5	.0	5.7	33.0	24.7	36.6	NW /15.1%
17	2019/年	7371(84%)	21.3	.0/NW	87.9/NNW	68.3	28.9	2.8	.0	9.2	38.0	15.0	37.8	SE /16.2%

DISC3A.BAT　測站編號:MS2

港灣技術研究中心

表4.2.5a　2019年馬祖海域3站觀測流速及流向重要統計量統計表

序號	日期 (年/月)	觀測點數	流速平均值 (cm/s)	平均流 流速/流向 (cm/s)/(來向)	最大流 流速/流向 (cm/s)/(來向)	1/2節流 <25.7 (%)	1節流 ~51.4 (%)	2節流 ~103 (%)	大流 >103 (%)	流向 N~E (%)	流向 E~S (%)	流向 S~W (%)	流向 W~N (%)	主要流向 方向/百分比
1	2018/12													
2	2019/01													
3	2019/02													
4	2019/03													
5	2019/04													
6	2019/05													
7	2019/06													
8	2019/07													
9	2019/08	218(29%)	35.7	11.8/WSW	96.4/N	34.4	46.8	18.8	.0	20.6	5.0	55.0	19.3	SSW/22.9%
10	2019/09	719(100%)	37.8	28.4/SW	101.3/SW	30.2	45.5	24.3	.0	9.2	5.8	75.5	9.5	SW /31.7%
11	2019/10	738(99%)	36.6	25.0/SW	98.1/N	31.8	45.9	22.2	.0	10.8	6.8	75.1	7.3	SW /33.3%
12	2019/11	718(100%)	35.5	27.4/SSW	88.2/SW	28.6	55.0	16.4	.0	9.7	10.0	76.5	3.8	SSW/33.7%
13	2019/冬													
14	2019/春													
15	2019/夏	218(10%)	35.7	11.8/WSW	96.4/N	34.4	46.8	18.8	.0	20.6	5.0	55.0	19.3	SSW/22.9%
16	2019/秋	2175(100%)	36.6	26.8/SW	101.3/SW	30.2	48.8	21.0	.0	9.9	7.5	75.7	6.9	SW /31.7%
17	2019/年	2393(27%)	36.5	25.3/SW	101.3/SW	30.6	48.6	20.8	.0	10.9	7.3	73.8	8.0	SW /30.6%

DISC3A.BAT　測站編號:MS3　港灣技術研究中心

表4.2.5b　2019年馬祖海域3站潮流流速及流向重要統計量統計表

序號	日期 (年/月)	觀測點數	流速平均值 (cm/s)	平均流流速/流向 (cm/s)/(來向)	最大流流速/流向 (cm/s)/(來向)	1/2節流 <25.7 (%)	1節流 ~51.4 (%)	2節流 ~103 (%)	大流 >103 (%)	流向 N~E (%)	流向 E~S (%)	流向 S~W (%)	流向 W~N (%)	主要流向方向/百分比
1	2018/12	744(100%)	26.1	25.3/SW	62.9/SW	50.0	45.3	4.7	.0	5.1	1.3	92.7	.8	SW /49.7%
2	2019/01	744(100%)	26.2	25.4/SW	62.5/SW	50.4	44.9	4.7	.0	4.4	.5	93.3	1.7	SW /50.1%
3	2019/02	672(100%)	26.3	25.3/SW	60.6/SW	49.7	45.7	4.6	.0	2.1	4.3	88.5	5.1	SSW/41.5%
4	2019/03	744(100%)	26.4	25.4/SW	56.8/SW	49.6	47.4	3.0	.0	1.2	6.5	87.5	4.8	SSW/40.7%
5	2019/04	720(100%)	26.4	25.3/SW	58.3/SSW	49.3	47.1	3.6	.0	1.8	6.5	87.5	4.2	SSW/39.3%
6	2019/05	744(100%)	26.2	25.4/SW	59.2/SSW	50.1	45.7	4.2	.0	3.6	3.9	90.6	1.9	SW /43.5%
7	2019/06	720(100%)	26.1	25.3/SW	61.5/SSW	50.4	44.7	4.9	.0	5.3	1.7	92.4	.7	SW /48.8%
8	2019/07	744(100%)	26.2	25.3/SW	62.4/SW	50.5	44.0	5.5	.0	4.7	.9	92.1	2.3	SW /49.6%
9	2019/08	744(100%)	26.4	25.3/SW	61.0/SW	50.1	44.6	5.2	.0	2.6	3.0	89.8	4.7	SSW/41.4%
10	2019/09	720(100%)	26.4	25.3/SW	58.8/SW	49.4	46.7	3.9	.0	1.4	7.2	86.4	5.0	SSW/41.7%
11	2019/10	744(100%)	26.5	25.3/SW	59.9/SSW	49.5	46.2	4.3	.0	2.4	6.6	86.7	4.3	SSW/38.8%
12	2019/11	720(100%)	26.3	25.3/SW	60.1/SSW	50.3	44.9	4.9	.0	4.4	4.2	90.0	1.4	SW /43.2%
13	2019/冬	2160(100%)	26.2	25.3/SW	62.9/SW	50.0	45.3	4.7	.0	3.9	2.0	91.6	2.5	SW /47.2%
14	2019/春	2208(100%)	26.4	25.4/SW	59.2/SSW	49.7	46.7	3.6	.0	2.2	5.6	88.5	3.6	SW /40.7%
15	2019/夏	2208(100%)	26.2	25.3/SW	62.4/SW	50.4	44.4	5.2	.0	4.2	1.9	91.4	2.6	SW /46.5%
16	2019/秋	2184(100%)	26.4	25.3/SW	60.1/SSW	49.7	45.9	4.3	.0	2.7	6.0	87.7	3.6	SSW/39.8%
17	2019/年	8760(100%)	26.3	25.3/SW	62.9/SW	50.0	45.6	4.5	.0	3.3	3.9	89.8	3.1	SW /43.4%

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表4.2.5c　2019年馬祖海域3站殘流流速及流向重要統計量統計表

序號	日期 (年/月)	觀測點數	流速 平均值 (cm/s)	平均流 流速/流向 (cm/s)/(來向)	最大流 流速/流向 (cm/s)/(來向)	1/2節流 <25.7 (%)	1節流 ~51.4 (%)	2節流 ~103 (%)	大流 >103 (%)	流向 N~E (%)	流向 E~S (%)	流向 S~W (%)	流向 W~N (%)	主要流向 方向/百分比
1	2018/12													
2	2019/01													
3	2019/02													
4	2019/03													
5	2019/04													
6	2019/05													
7	2019/06													
8	2019/07													
9	2019/08	218(29%)	31.9	16.2/NNE	97.1/NNE	46.8	33.5	19.7	.0	46.3	8.7	23.9	21.1	NNE/18.8%
10	2019/09	719(100%)	22.2	3.1/SW	89.9/NNE	67.5	28.9	3.6	.0	25.2	17.8	38.8	18.2	SW /12.1%
11	2019/10	738(99%)	23.6	.9/NNW	95.2/N	65.3	29.3	5.4	.0	34.8	13.8	35.2	16.1	NNE/15.0%
12	2019/11	718(100%)	20.8	3.6/SSE	64.4/NE	70.6	28.1	1.3	.0	31.2	17.7	40.5	10.6	SSW/15.2%
13	2019/冬													
14	2019/春													
15	2019/夏	218(10%)	31.9	16.2/NNE	97.1/NNE	46.8	33.5	19.7	.0	46.3	8.7	23.9	21.1	NNE/18.8%
16	2019/秋	2175(100%)	22.2	1.6/SSW	95.2/N	67.8	28.8	3.4	.0	30.4	16.4	38.2	15.0	SSW/12.1%
17	2019/年	2393(27%)	23.1	.0/N	97.1/NNE	65.9	29.2	4.9	.0	31.9	15.7	36.9	15.5	NNE/12.3%

DISC3A.BAT　測站編號:MS3　港灣技術研究中心

表4.2.6a　2019年馬祖海域4站觀測流速及流向重要統計量統計表

序號	日期 (年/月)	觀測點數	流速 平均值 (cm/s)	平均流 流速/流向 (cm/s)/(來向)	最大流 流速/流向 (cm/s)/(來向)	1/2節流 <25.7 (%)	1節流 ~51.4 (%)	2節流 ~103 (%)	大流 >103 (%)	流向 N~E (%)	流向 E~S (%)	流向 S~W (%)	流向 W~N (%)	主要流向 方向/百分比
1	2018/12													
2	2019/01													
3	2019/02													
4	2019/03													
5	2019/04													
6	2019/05													
7	2019/06													
8	2019/07													
9	2019/08	102(14%)	20.6	9.0/SSE	46.2/SE	70.6	29.4	.0	.0	4.9	45.1	28.4	21.6	SSE/21.6%
10	2019/09	720(100%)	17.0	5.1/S	70.7/SE	80.3	19.3	.4	.0	8.1	34.6	28.5	28.9	SE /15.3%
11	2019/10	741(100%)	17.3	3.6/S	59.2/SSE	80.7	18.9	.4	.0	7.6	34.0	26.7	31.7	SE /14.0%
12	2019/11	719(100%)	17.8	9.6/SSE	79.3/SE	80.4	17.1	2.5	.0	3.2	45.1	29.8	22.0	SE /21.7%
13	2019/冬													
14	2019/春													
15	2019/夏	102(5%)	20.6	9.0/SSE	46.2/SE	70.6	29.4	.0	.0	4.9	45.1	28.4	21.6	SSE/21.6%
16	2019/秋	2180(100%)	17.4	6.0/S	79.3/SE	80.5	18.4	1.1	.0	6.3	37.8	28.3	27.6	SE /17.0%
17	2019/年	2282(26%)	17.5	6.2/S	79.3/SE	80.0	18.9	1.1	.0	6.2	38.2	28.3	27.3	SE /16.8%

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表4.2.6b　2019年馬祖海域4站潮流流速及流向重要統計量統計表

序號	日期 (年/月)	觀測點數	流速平均值 (cm/s)	平均流流速/流向 (cm/s)/(來向)	最大流流速/流向 (cm/s)/(來向)	1/2節流 <25.7 (%)	1節流 ~51.4 (%)	2節流 ~103 (%)	大流 >103 (%)	流向 N~E (%)	流向 E~S (%)	流向 S~W (%)	流向 W~N (%)	主要流向方向/百分比
1	2018/12	744(100%)	9.9	6.2/S	24.5/SE	100.0	.0	.0	.0	.0	53.8	24.7	21.5	SSE/34.8%
2	2019/01	744(100%)	9.8	6.2/S	24.9/SE	100.0	.0	.0	.0	.1	53.5	24.2	22.2	SSE/31.2%
3	2019/02	672(100%)	10.1	6.1/S	24.5/SSE	100.0	.0	.0	.0	.6	53.3	21.4	24.7	SSE/30.2%
4	2019/03	744(100%)	9.9	6.2/S	23.8/SSE	100.0	.0	.0	.0	.7	53.2	22.4	23.7	SSE/30.5%
5	2019/04	720(100%)	9.9	6.2/S	23.6/SSE	100.0	.0	.0	.0	.6	53.1	22.4	24.0	SSE/31.3%
6	2019/05	744(100%)	9.8	6.2/S	23.6/SSE	100.0	.0	.0	.0	.3	54.3	23.1	22.3	SSE/33.7%
7	2019/06	720(100%)	9.9	6.2/S	23.8/SE	100.0	.0	.0	.0	.0	53.8	22.8	23.5	SSE/34.7%
8	2019/07	744(100%)	9.9	6.2/S	24.5/SE	100.0	.0	.0	.0	.3	54.0	23.3	22.4	SSE/30.6%
9	2019/08	744(100%)	10.1	6.2/S	24.4/SSE	100.0	.0	.0	.0	.4	53.0	21.8	24.9	SSE/30.8%
10	2019/09	720(100%)	10.1	6.1/S	24.3/SE	100.0	.0	.0	.0	.8	52.6	22.1	24.4	SSE/29.9%
11	2019/10	744(100%)	10.2	6.1/S	24.1/SSE	100.0	.0	.0	.0	.1	53.4	20.8	25.7	SSE/31.3%
12	2019/11	720(100%)	10.0	6.1/S	23.7/SSE	100.0	.0	.0	.0	.1	54.0	22.1	23.8	SSE/33.2%
13	2019/冬	2160(100%)	9.9	6.2/S	24.9/SE	100.0	.0	.0	.0	.2	53.5	23.5	22.7	SSE/32.1%
14	2019/春	2208(100%)	9.9	6.2/S	23.8/SSE	100.0	.0	.0	.0	.5	53.5	22.6	23.3	SSE/31.8%
15	2019/夏	2208(100%)	10.0	6.2/S	24.5/SE	100.0	.0	.0	.0	.2	53.6	22.6	23.6	SSE/32.0%
16	2019/秋	2184(100%)	10.1	6.1/S	24.3/SE	100.0	.0	.0	.0	.4	53.3	21.7	24.6	SSE/31.5%
17	2019/年	8760(100%)	10.0	6.2/S	24.9/SE	100.0	.0	.0	.0	.3	53.5	22.6	23.6	SSE/31.9%

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表4.2.6c　2019年馬祖海域4站殘流流速及流向重要統計量統計表

序號	日期 (年/月)	觀測點數	流速 平均值 (cm/s)	平均流 流速/流向 (cm/s)/(來向)	最大流 流速/流向 (cm/s)/(來向)	1/2節流 <25.7 (%)	1節流 ~51.4 (%)	2節流 ~103 (%)	大流 >103 (%)	流向 N~E (%)	流向 E~S (%)	流向 S~W (%)	流向 W~N (%)	主要流向 方向/百分比
1	2018/12													
2	2019/01													
3	2019/02													
4	2019/03													
5	2019/04													
6	2019/05													
7	2019/06													
8	2019/07													
9	2019/08	102(14%)	14.8	2.6/SSE	33.7/N	90.2	9.8	.0	.0	10.8	38.2	23.5	27.5	SSE/15.7%
10	2019/09	720(100%)	14.8	1.2/NW	62.7/SE	90.0	9.6	.4	.0	16.1	28.9	19.0	36.0	NNW/12.8%
11	2019/10	741(100%)	16.0	2.6/NNW	50.8/SE	84.8	15.2	.0	.0	14.4	27.8	15.7	42.1	NNW/15.0%
12	2019/11	719(100%)	13.4	3.5/SSE	68.6/SSE	91.0	8.5	.6	.0	7.5	43.0	19.5	30.0	SE /19.1%
13	2019/冬													
14	2019/春													
15	2019/夏	102(5%)	14.8	2.6/SSE	33.7/N	90.2	9.8	.0	.0	10.8	38.2	23.5	27.5	SSE/15.7%
16	2019/秋	2180(100%)	14.8	.1/NNW	68.6/SSE	88.5	11.1	.3	.0	12.7	33.2	18.0	36.1	NNW/12.6%
17	2019/年	2282(26%)	14.8	.0/SSE	68.6/SSE	88.6	11.1	.3	.0	12.6	33.4	18.3	35.7	NNW/12.4%

DISC3A.BAT　測站編號:MS4　港灣技術研究中心

4.3　2019 年馬祖海域各測站觀測海流與計算潮流(殘流)歷線比較圖

Current Speed in Ma-Tsu Harbor of MSX0 at 2019

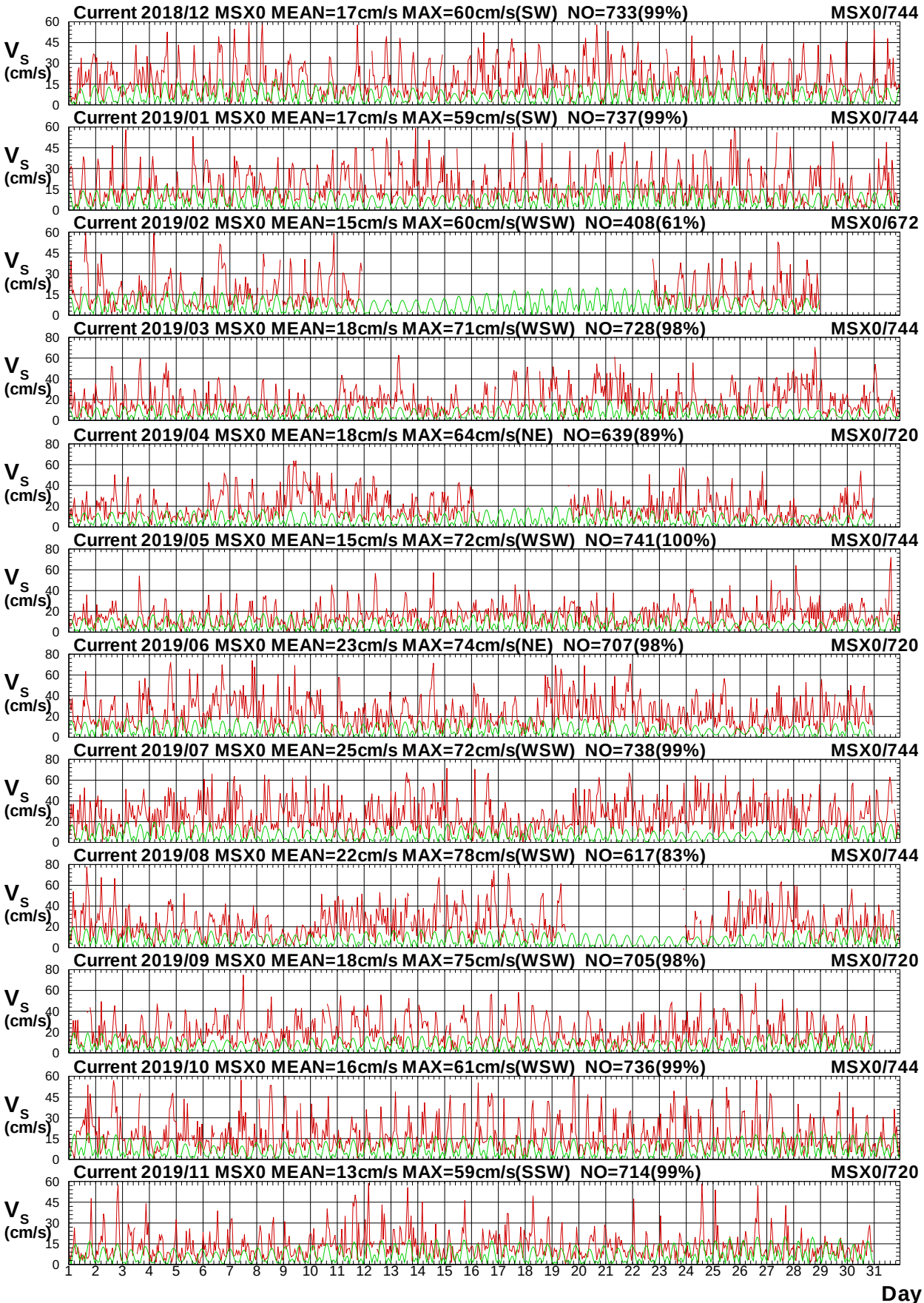


圖4.3.1a　2019年每月馬祖海域 X 站觀測與潮流流速比較圖

C18CMSX0.1H0 C18CMSX0.1HD C191MSX0.1H0 C191MSX0.1HD C192MSX0.1H0 C192MSX0.1HD
C193MSX0.1H0 C193MSX0.1HD C194MSX0.1H0 C194MSX0.1HD C195MSX0.1H0 C195MSX0.1HD

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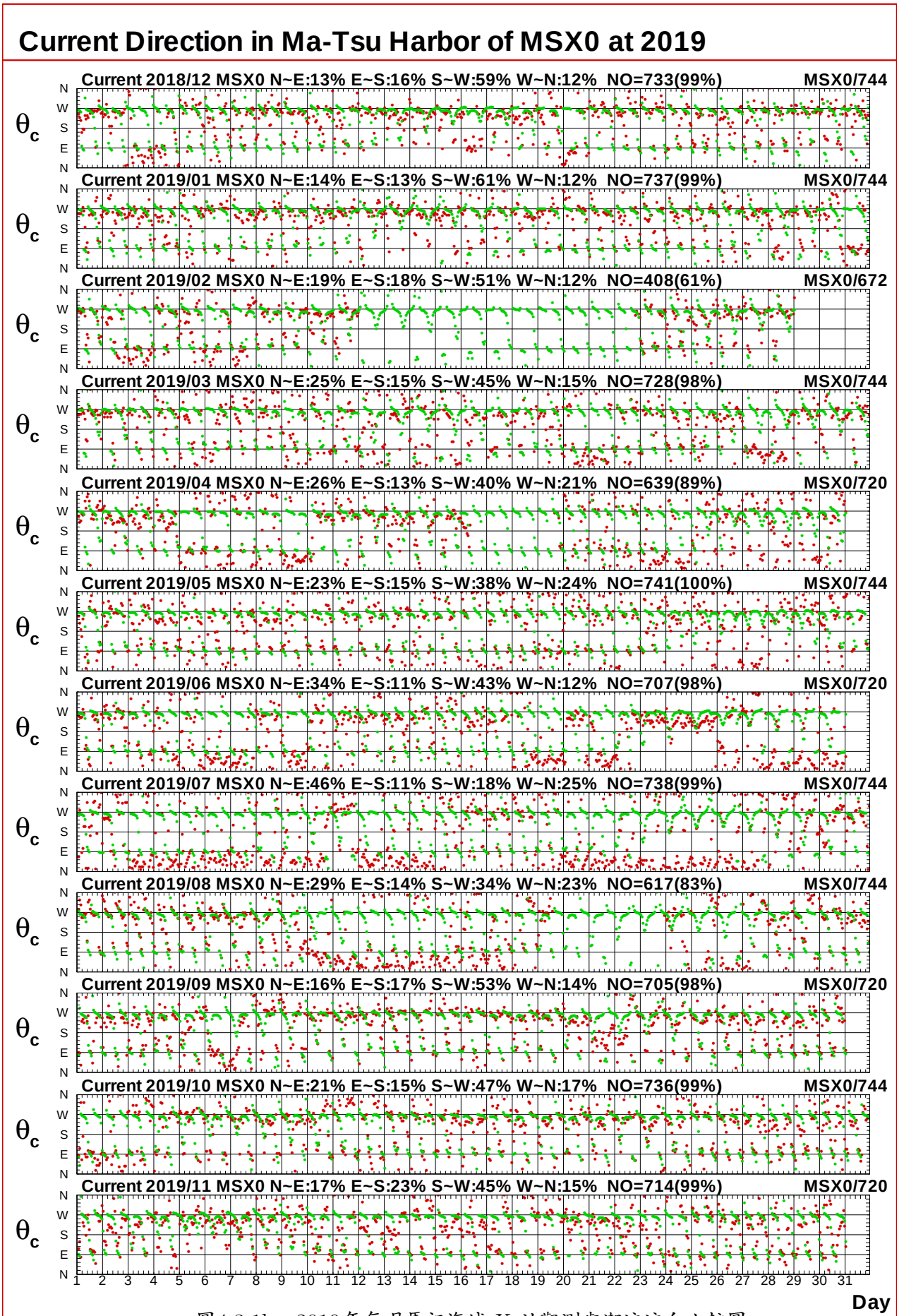


圖4.3.1b　2019年每月馬祖海域 X 站觀測與潮流流向比較圖

C18CMSX0.1H0 C18CMSX0.1HD C191MSX0.1H0 C191MSX0.1HD C192MSX0.1H0 C192MSX0.1HD
C193MSX0.1H0 C193MSX0.1HD C194MSX0.1H0 C194MSX0.1HD C195MSX0.1H0 C195MSX0.1HD

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Current Speed in Ma-Tsu Harbor of MSX0 at 2019

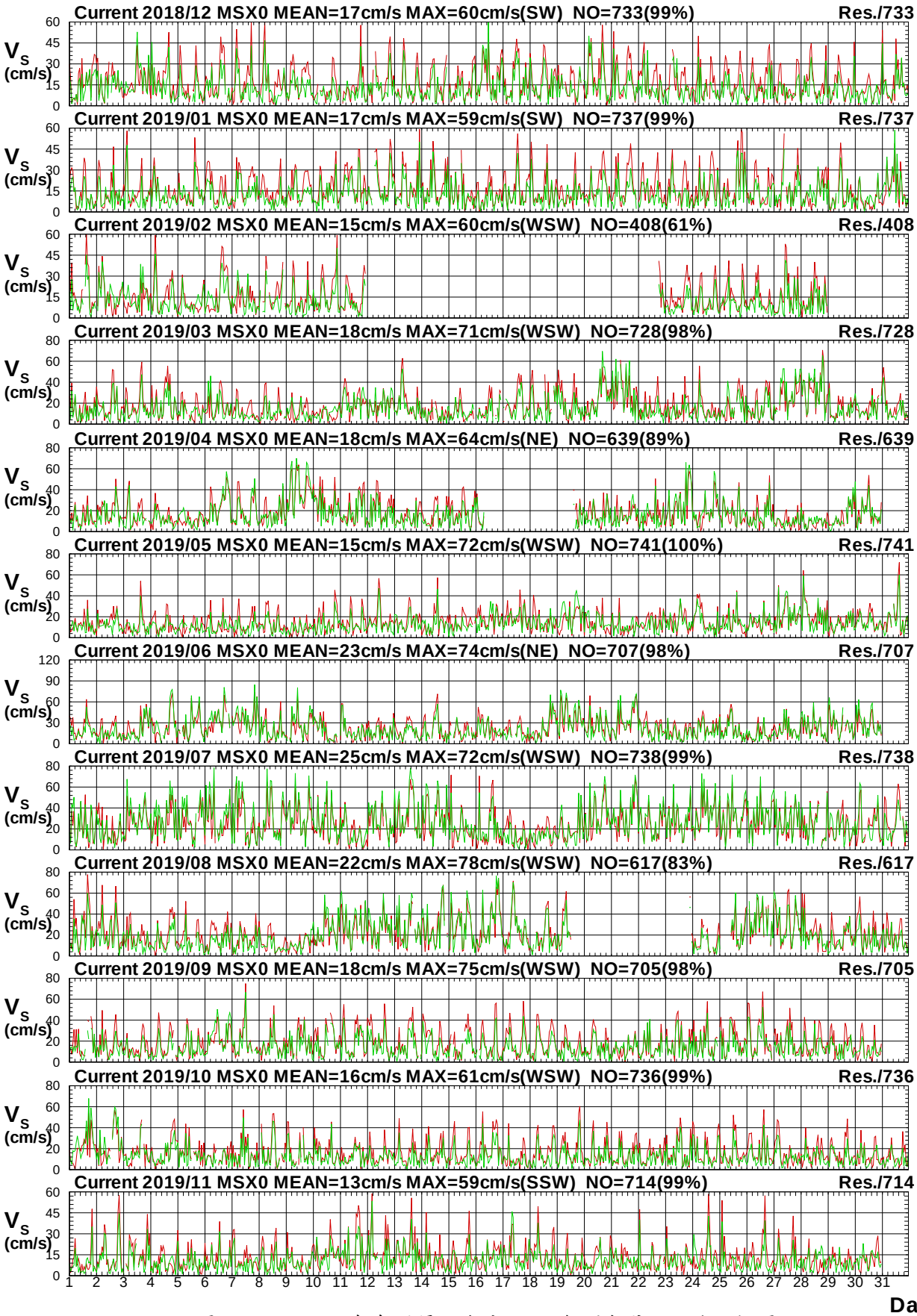


圖4.3.2a　2019年每月馬祖海域 X 站觀測與殘流流速比較圖

C18CMSX0.1H0 C18CMSX0.1HR C191MSX0.1H0 C191MSX0.1HR C192MSX0.1H0 C192MSX0.1HR
C193MSX0.1H0 C193MSX0.1HR C194MSX0.1H0 C194MSX0.1HR C195MSX0.1H0 C195MSX0.1HR

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Current Direction in Ma-Tsu Harbor of MSX0 at 2019

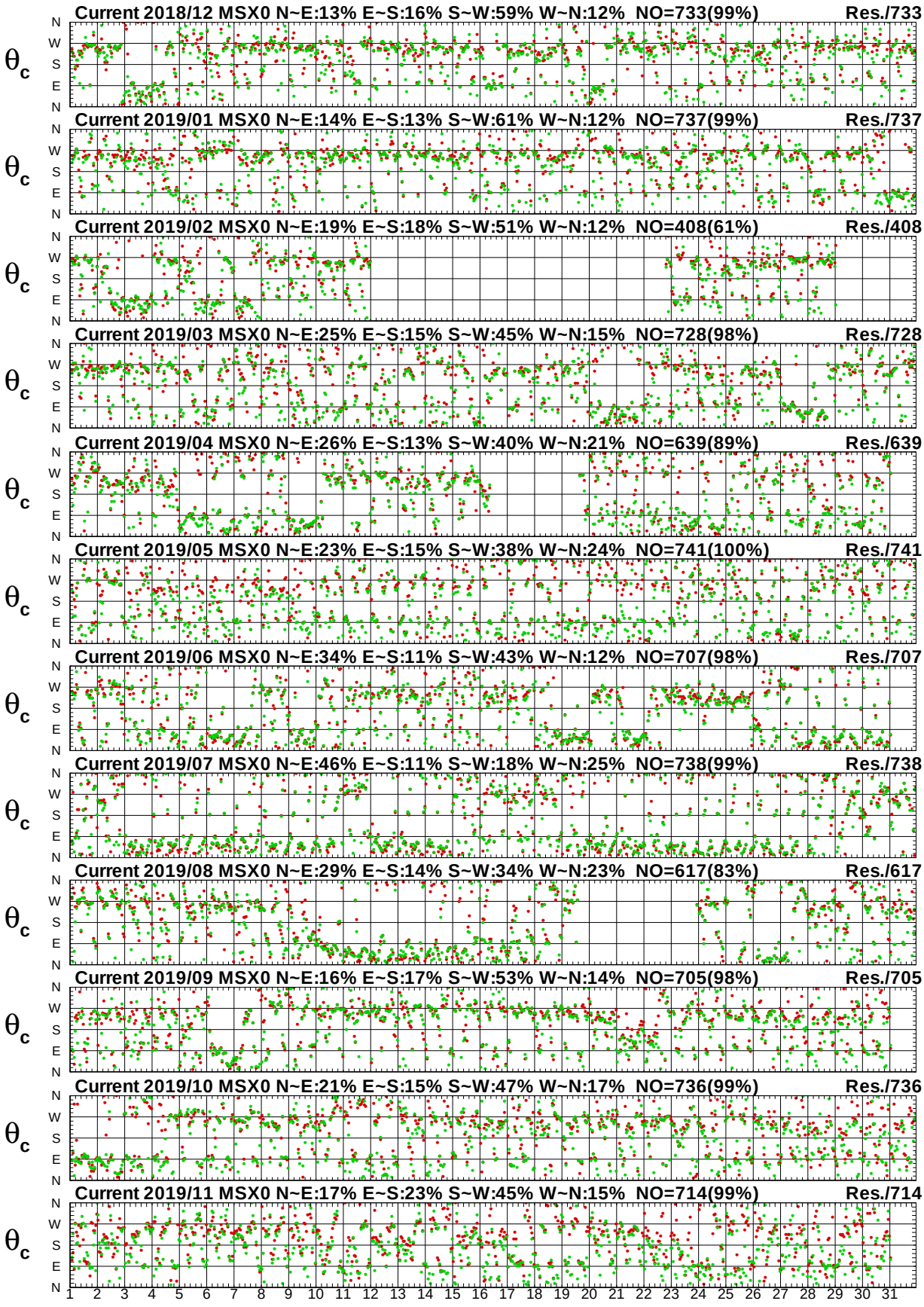


圖4.3.2b　2019年每月馬祖海域 X 站觀測與殘流流向比較圖

C18CMSX0.1H0 C18CMSX0.1HR C191MSX0.1H0 C191MSX0.1HR C192MSX0.1H0 C192MSX0.1HR
C193MSX0.1H0 C193MSX0.1HR C194MSX0.1H0 C194MSX0.1HR C195MSX0.1H0 C195MSX0.1HR

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Current Speed in Ma-Tsu Harbor of MSY0 at 2019

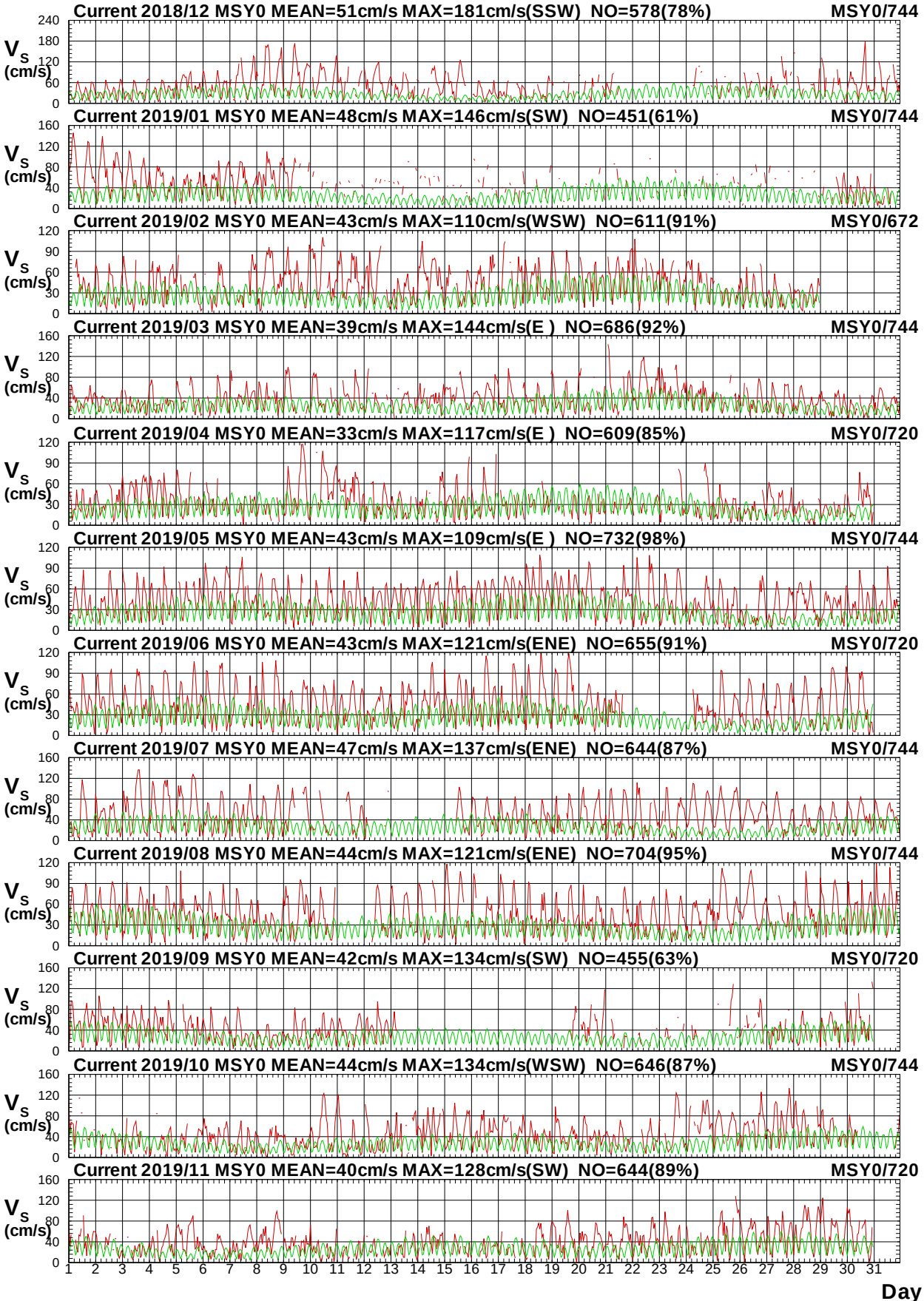


圖4.3.3a　2019年每月馬祖海域 Y 站觀測與潮流流速比較圖

C18CMSY0.1H0 C18CMSY0.1HD C191MSY0.1H0 C191MSY0.1HD C192MSY0.1H0 C192MSY0.1HD
C193MSY0.1H0 C193MSY0.1HD C194MSY0.1H0 C194MSY0.1HD C195MSY0.1H0 C195MSY0.1HD

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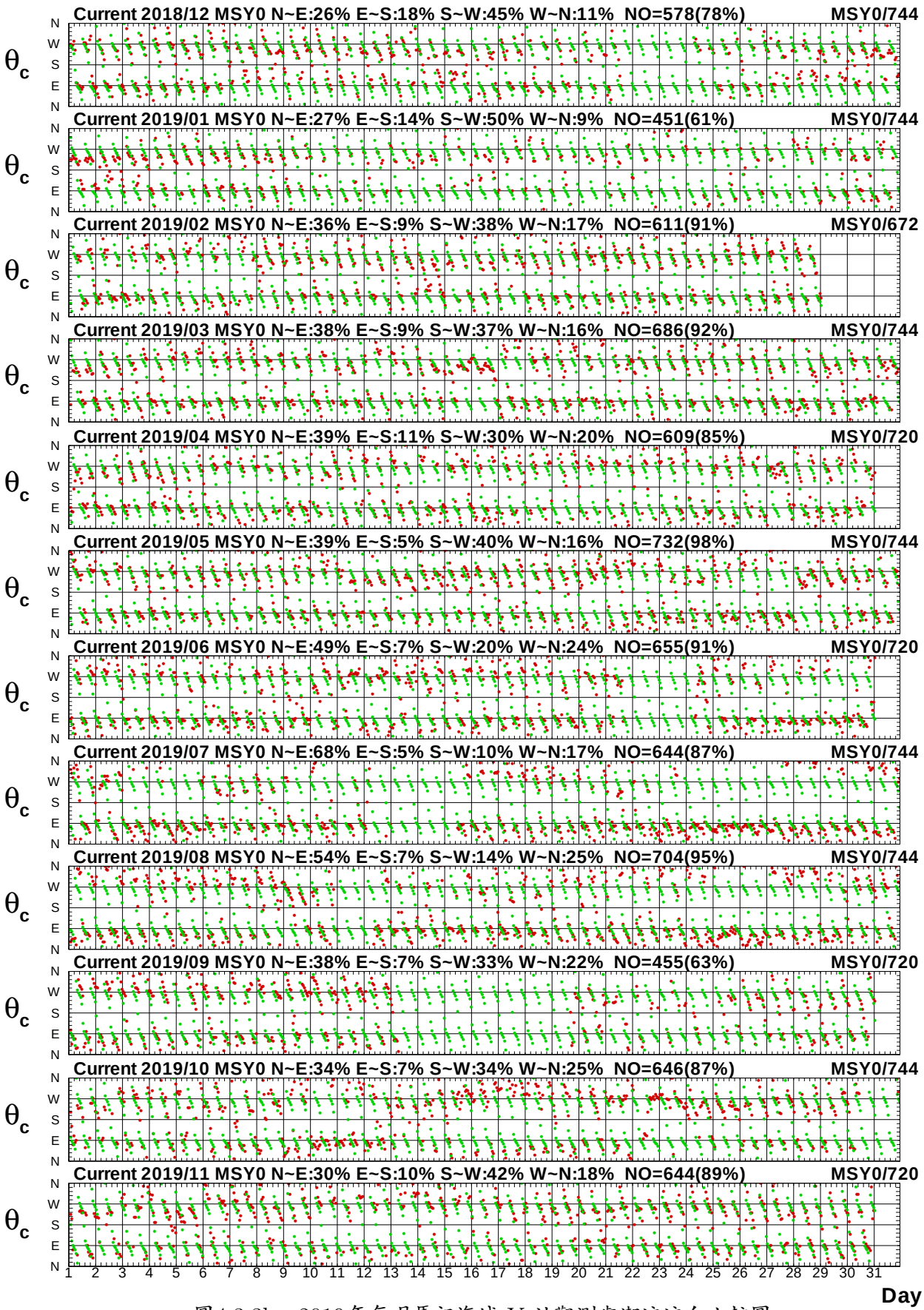


圖4.3.3b　2019年每月馬祖海域 Y 站觀測與潮流流向比較圖

C18CMSY0.1H0 C18CMSY0.1HD C191MSY0.1H0 C191MSY0.1HD C192MSY0.1H0 C192MSY0.1HD
C193MSY0.1H0 C193MSY0.1HD C194MSY0.1H0 C194MSY0.1HD C195MSY0.1H0 C195MSY0.1HD

Institute of Harbor & Marine Technology

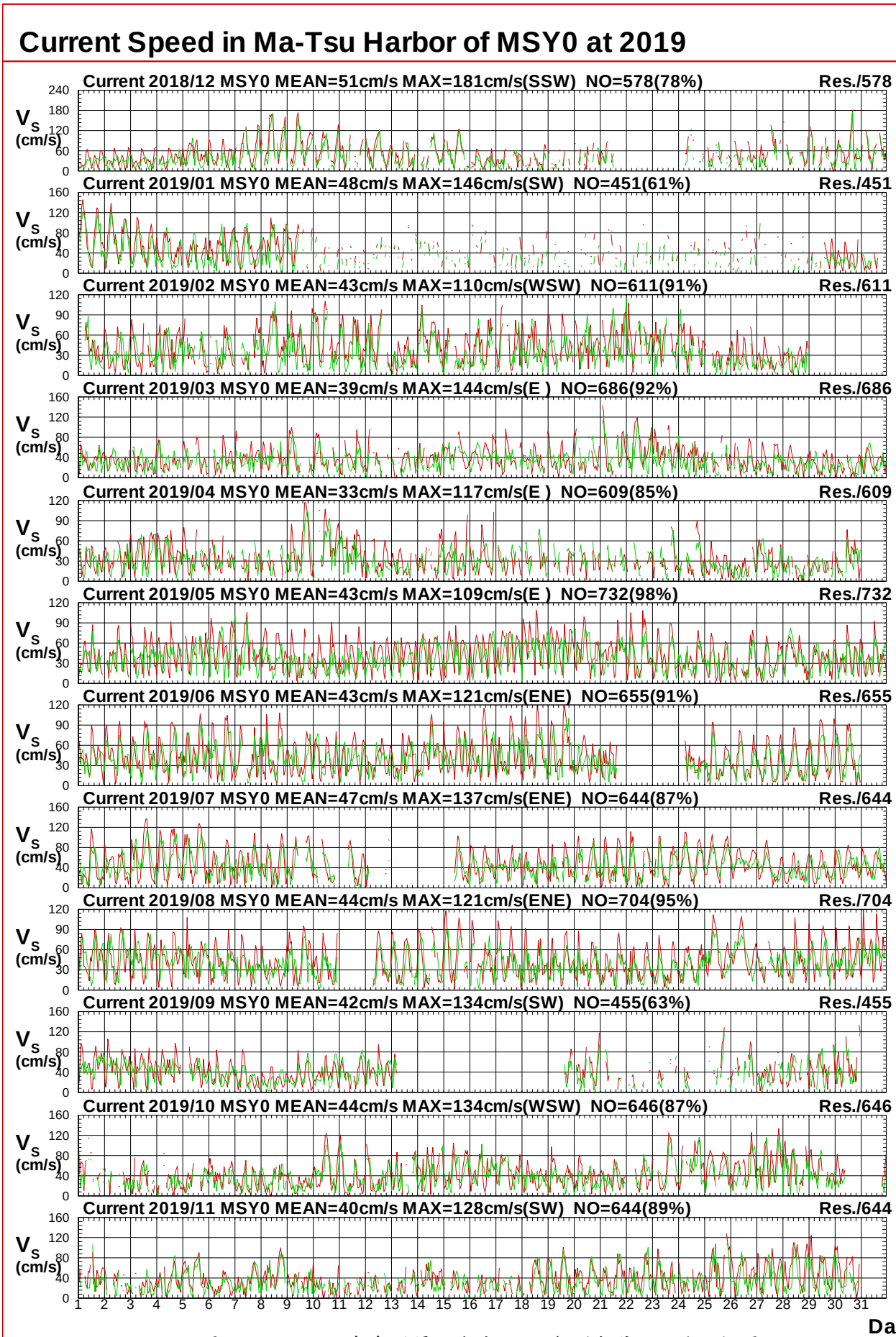


圖4.3.4a　2019年每月馬祖海域 Y 站觀測與殘流流速比較圖

C18CMSY0.1H0 C18CMSY0.1HR C191MSY0.1H0 C191MSY0.1HR C192MSY0.1H0 C192MSY0.1HR
C193MSY0.1H0 C193MSY0.1HR C194MSY0.1H0 C194MSY0.1HR C195MSY0.1H0 C195MSY0.1HR

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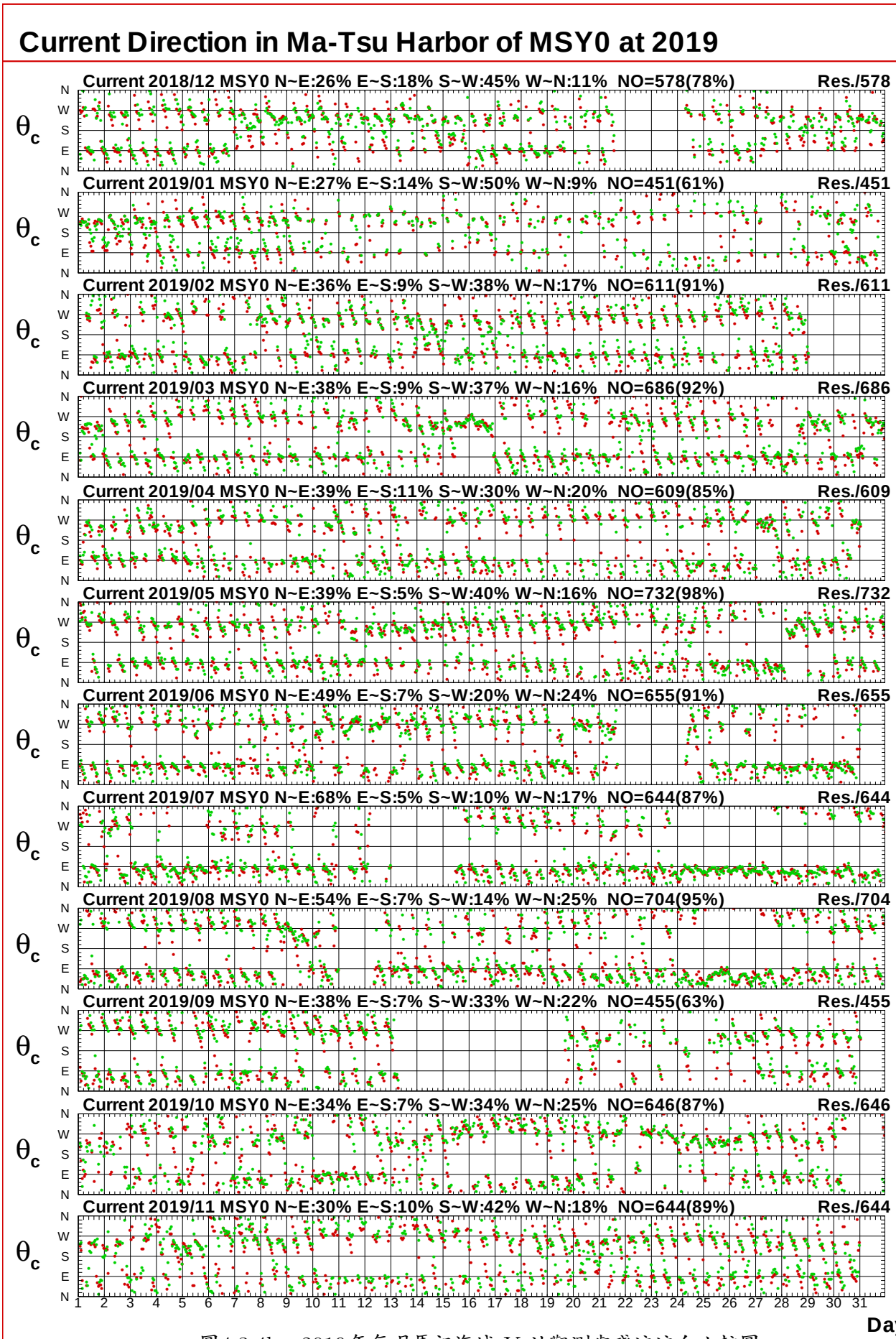


圖4.3.4b　2019年每月馬祖海域 Y 站觀測與殘流流向比較圖

C18CMSY0.1H0 C18CMSY0.1HR C191MSY0.1H0 C191MSY0.1HR C192MSY0.1H0 C192MSY0.1HR
C193MSY0.1H0 C193MSY0.1HR C194MSY0.1H0 C194MSY0.1HR C195MSY0.1H0 C195MSY0.1HR

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Current Speed in Ma-Tsu Harbor of MSA0 at 2019

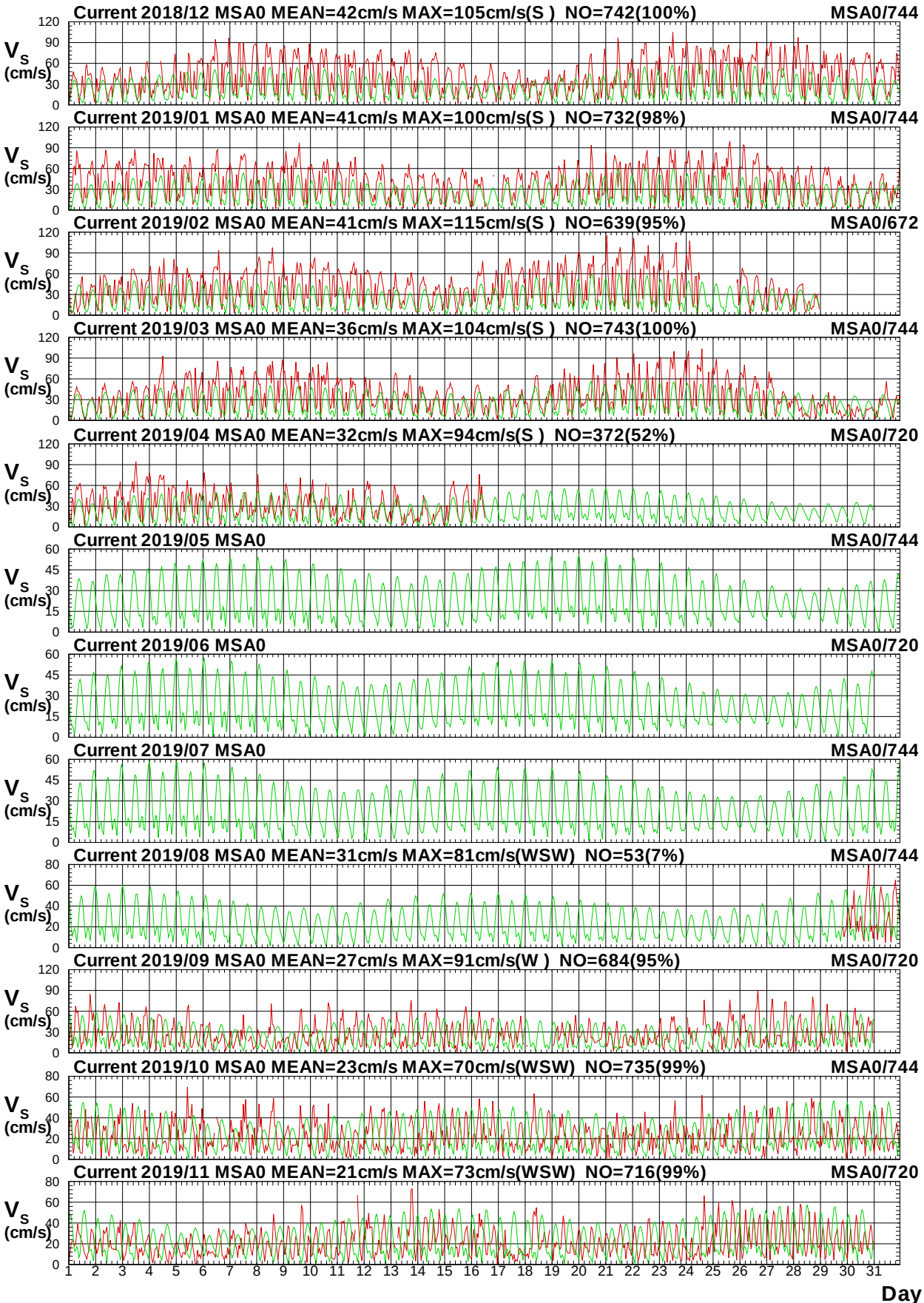


圖4.3.5a　2019年每月馬祖海域 A 站觀測與潮流流速比較圖

C18CMSA0.1H0 C18CMSA0.1HD C191MSA0.1H0 C191MSA0.1HD C192MSA0.1H0 C192MSA0.1HD
C193MSA0.1H0 C193MSA0.1HD C194MSA0.1H0 C194MSA0.1HD C195MSA0.1H0 C195MSA0.1HD

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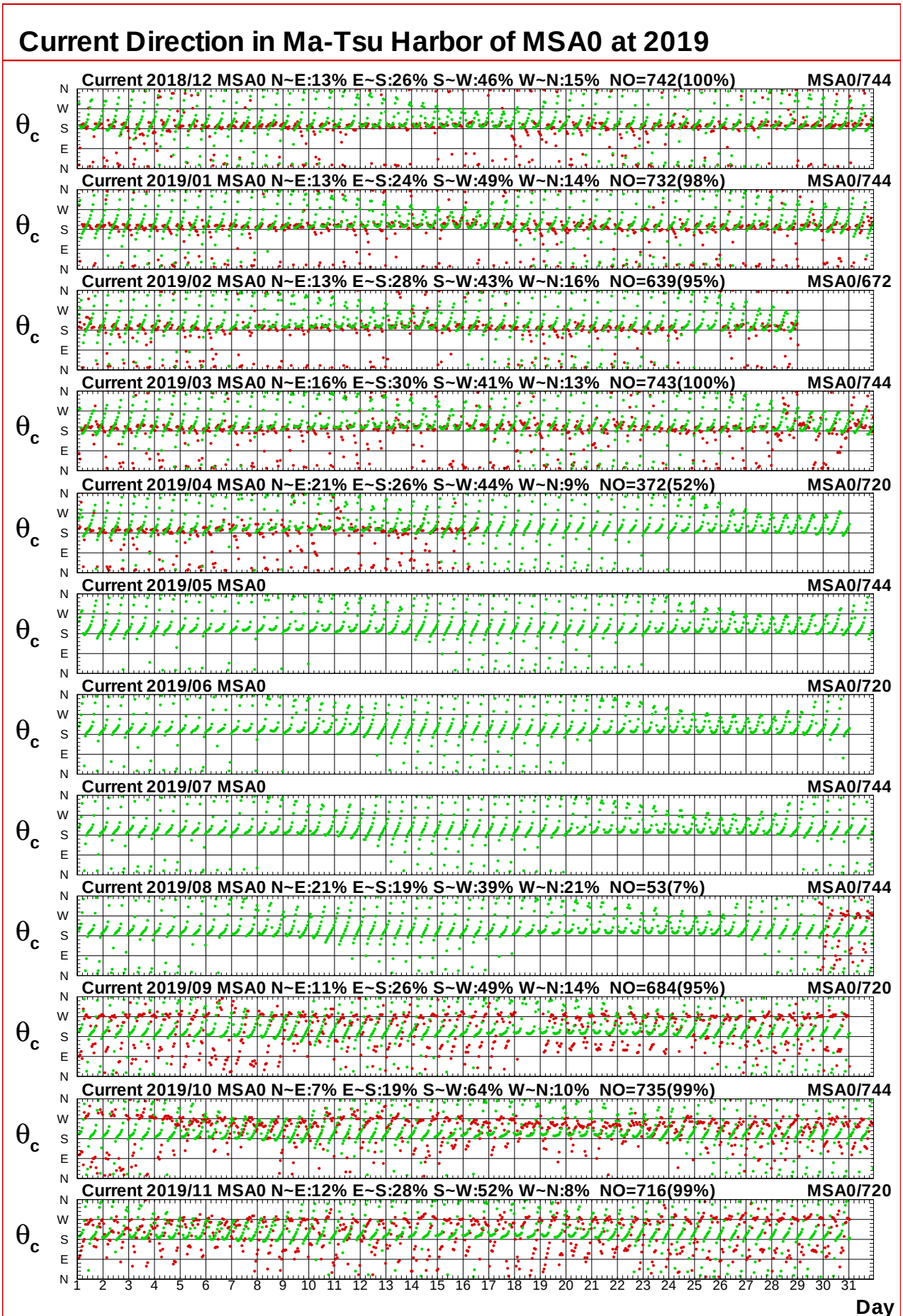


圖4.3.5b　2019年每月馬祖海域 A 站觀測與潮流流向比較圖

C18CMSA0.1H0 C18CMSA0.1HD C191MSA0.1H0 C191MSA0.1HD C192MSA0.1H0 C192MSA0.1HD
C193MSA0.1H0 C193MSA0.1HD C194MSA0.1H0 C194MSA0.1HD C195MSA0.1H0 C195MSA0.1HD

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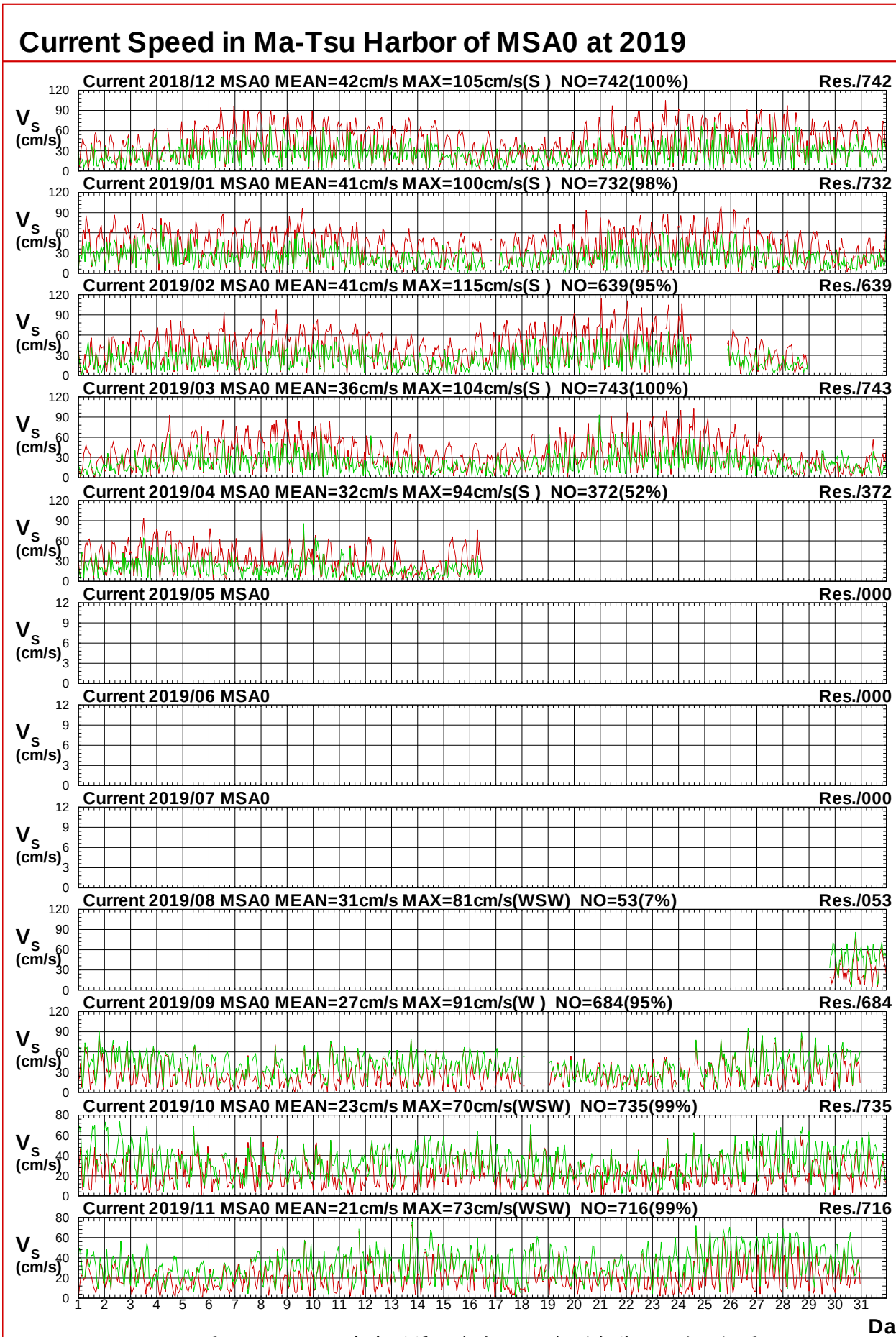


圖4.3.6a　2019年每月馬祖海域 A 站觀測與殘流流速比較圖

C18CMSA0.1H0 C18CMSA0.1HR C191MSA0.1H0 C191MSA0.1HR C192MSA0.1H0 C192MSA0.1HR
C193MSA0.1H0 C193MSA0.1HR C194MSA0.1H0 C194MSA0.1HR C195MSA0.1H0 C195MSA0.1HR

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Current Direction in Ma-Tsu Harbor of MSA0 at 2019

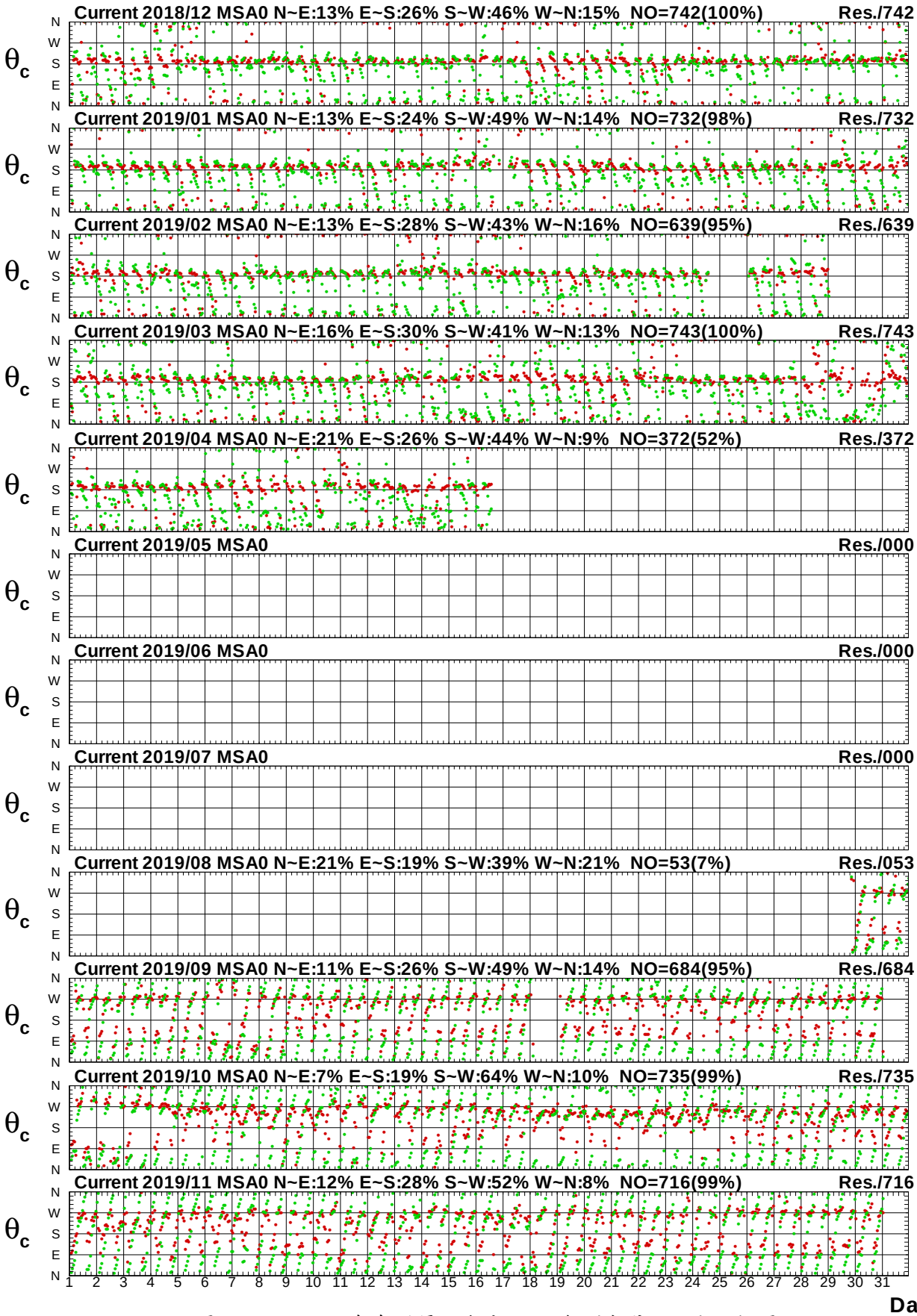


圖4.3.6b　2019年每月馬祖海域 A 站觀測與殘流流向比較圖

C18CMSA0.1H0 C18CMSA0.1HR C191MSA0.1H0 C191MSA0.1HR C192MSA0.1H0 C192MSA0.1HR
C193MSA0.1H0 C193MSA0.1HR C194MSA0.1H0 C194MSA0.1HR C195MSA0.1H0 C195MSA0.1HR

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Current Speed in Ma-Tsu Harbor of MS20 at 2019

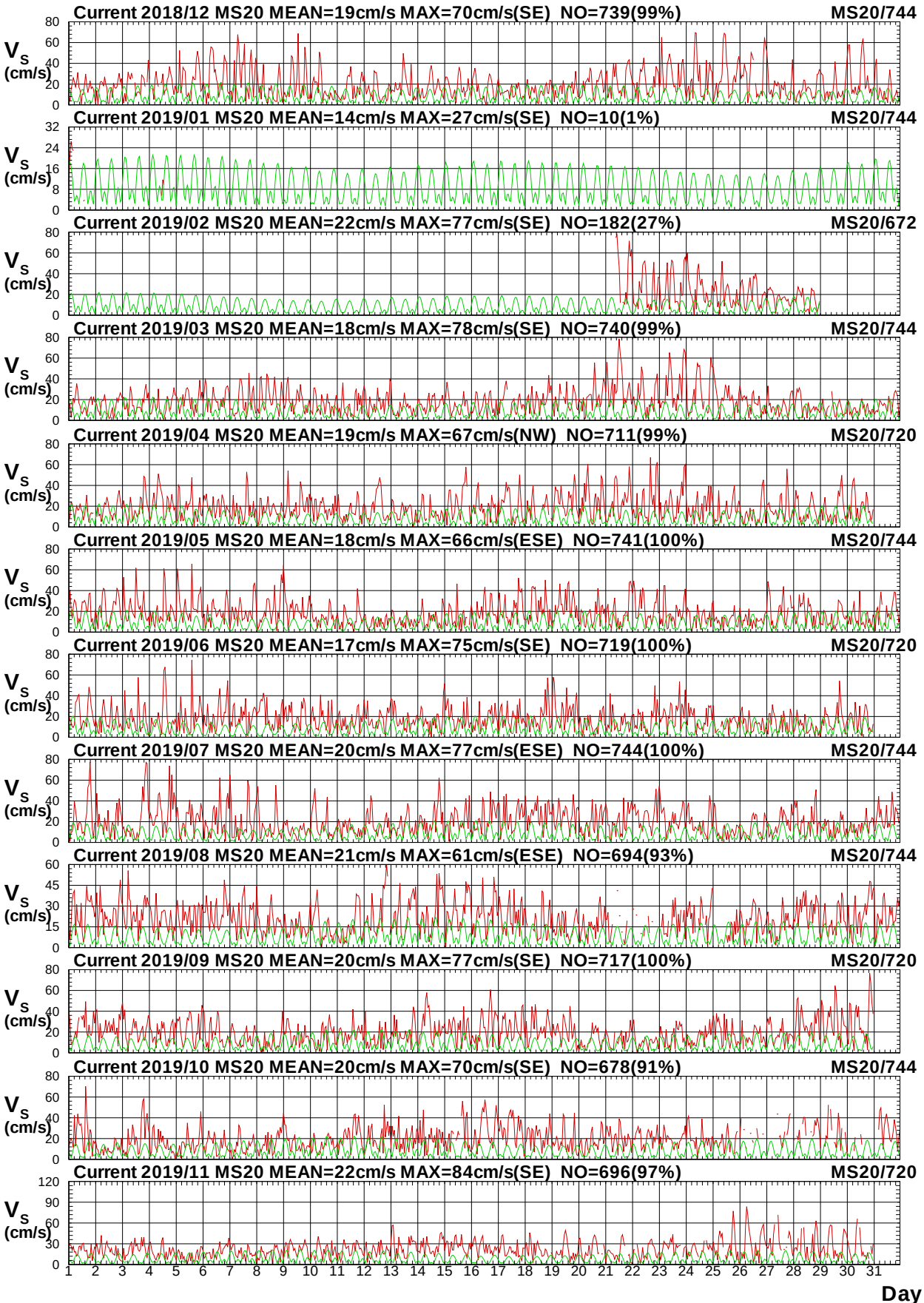


圖4.3.7a　2019年每月馬祖海域2站觀測與潮流流速比較圖

C18CMS20.1H0 C18CMS20.1HD C191MS20.1H0 C191MS20.1HD C192MS20.1H0 C192MS20.1HD
C193MS20.1H0 C193MS20.1HD C194MS20.1H0 C194MS20.1HD C195MS20.1H0 C195MS20.1HD

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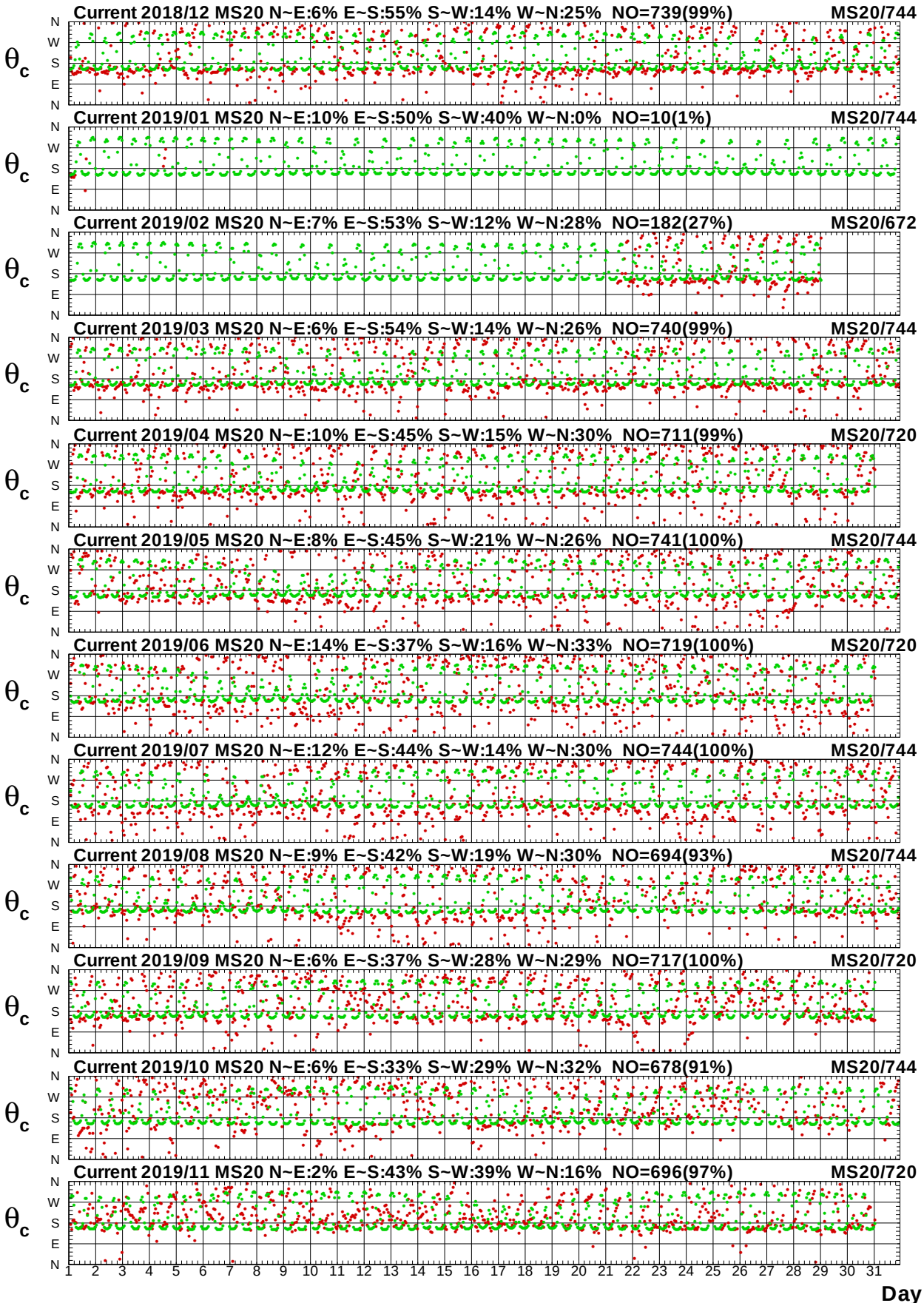


圖4.3.7b　2019年每月馬祖海域2站觀測與潮流流向比較圖

Current Speed in Ma-Tsu Harbor of MS20 at 2019

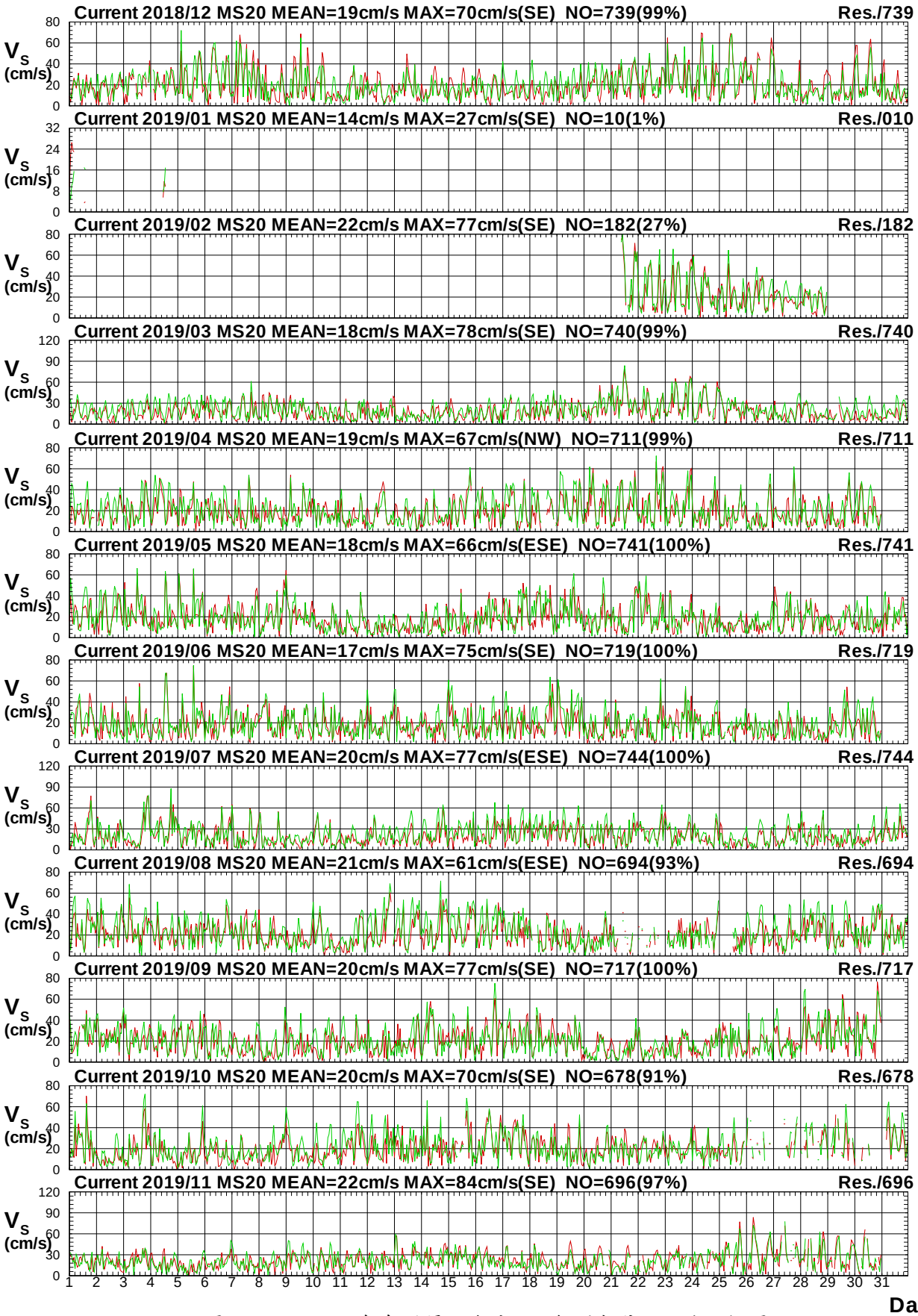


圖4.3.8a　2019年每月馬祖海域2站觀測與殘流流速比較圖

C18CMS20.1H0 C18CMS20.1HR C191MS20.1H0 C191MS20.1HR C192MS20.1H0 C192MS20.1HR
C193MS20.1H0 C193MS20.1HR C194MS20.1H0 C194MS20.1HR C195MS20.1H0 C195MS20.1HR

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Current Direction in Ma-Tsu Harbor of MS20 at 2019

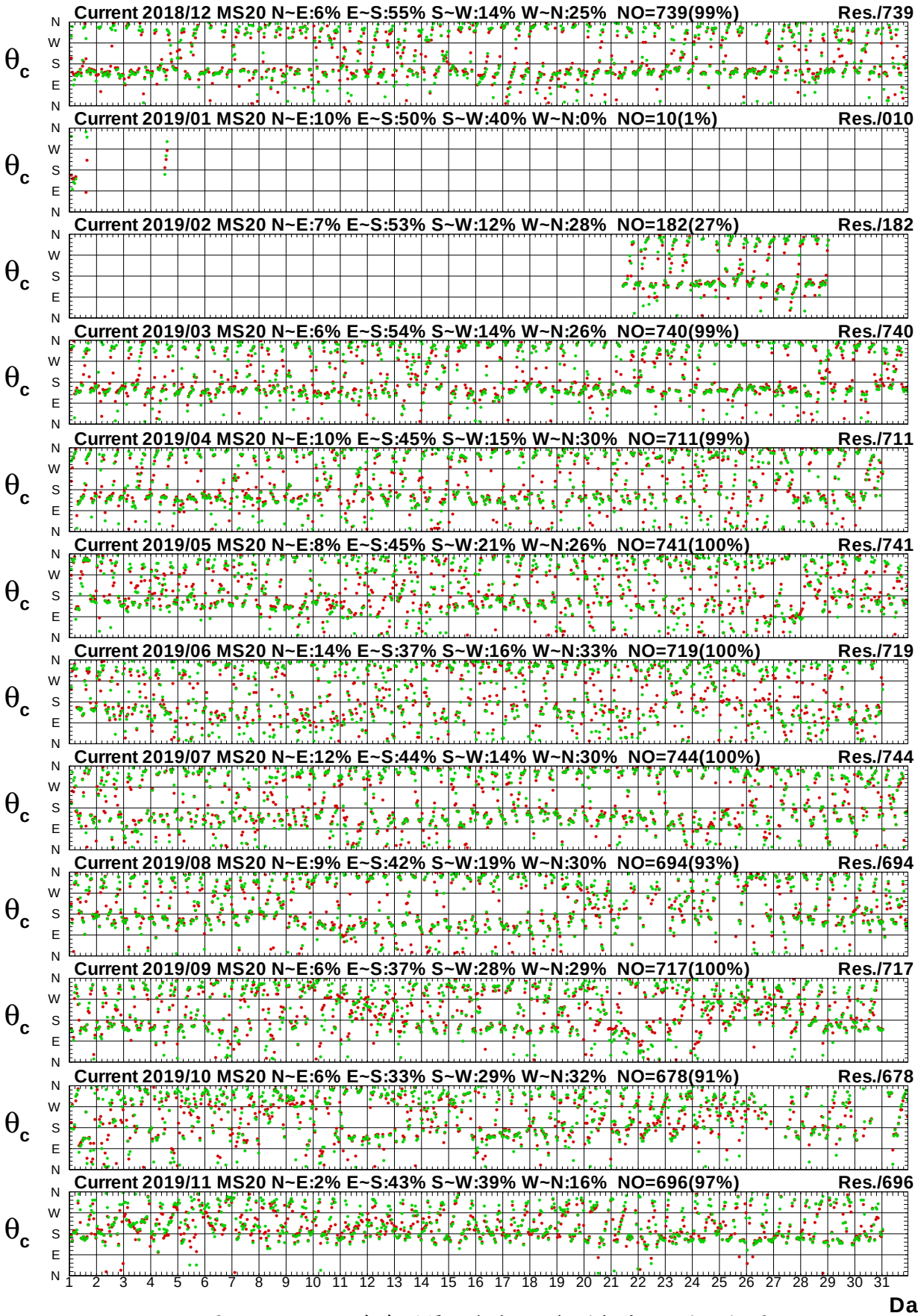


圖4.3.8b　2019年每月馬祖海域2站觀測與殘流流向比較圖

C18CMS20.1H0 C18CMS20.1HR C191MS20.1H0 C191MS20.1HR C192MS20.1H0 C192MS20.1HR
C193MS20.1H0 C193MS20.1HR C194MS20.1H0 C194MS20.1HR C195MS20.1H0 C195MS20.1HR

Institute of Harbor & Marine Technology

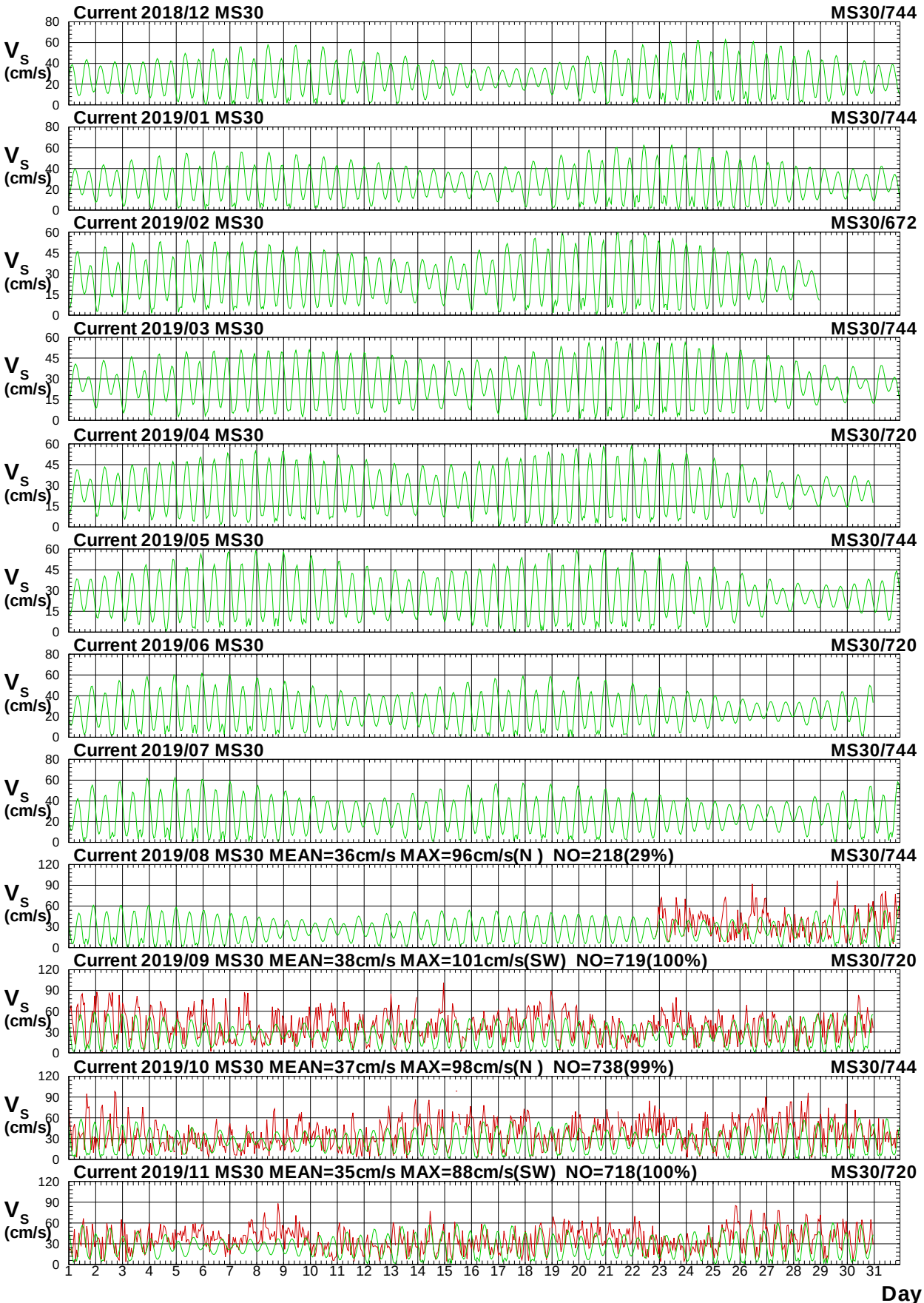


圖4.3.9a　2019年每月馬祖海域3站觀測與潮流流速比較圖

C18CMS30.1H0 C18CMS30.1HD C191MS30.1H0 C191MS30.1HD C192MS30.1H0 C192MS30.1HD
C193MS30.1H0 C193MS30.1HD C194MS30.1H0 C194MS30.1HD C195MS30.1H0 C195MS30.1HD

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Current Direction in Ma-Tsu Harbor of MS30 at 2019

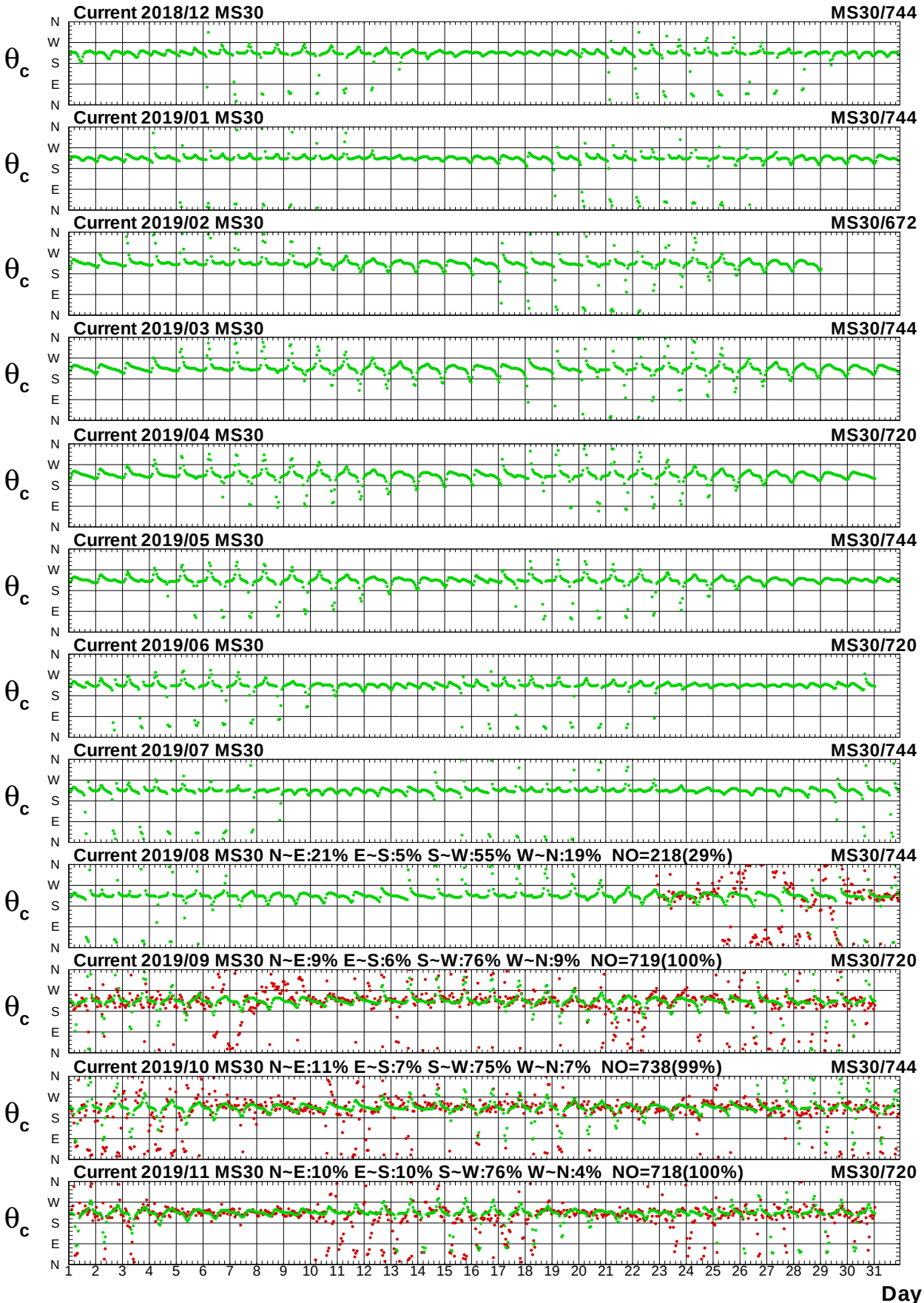


圖4.3.9b　2019年每月馬祖海域3站觀測與潮流流向比較圖

C18CMS30.1H0 C18CMS30.1HD C191MS30.1H0 C191MS30.1HD C192MS30.1H0 C192MS30.1HD
C193MS30.1H0 C193MS30.1HD C194MS30.1H0 C194MS30.1HD C195MS30.1H0 C195MS30.1HD

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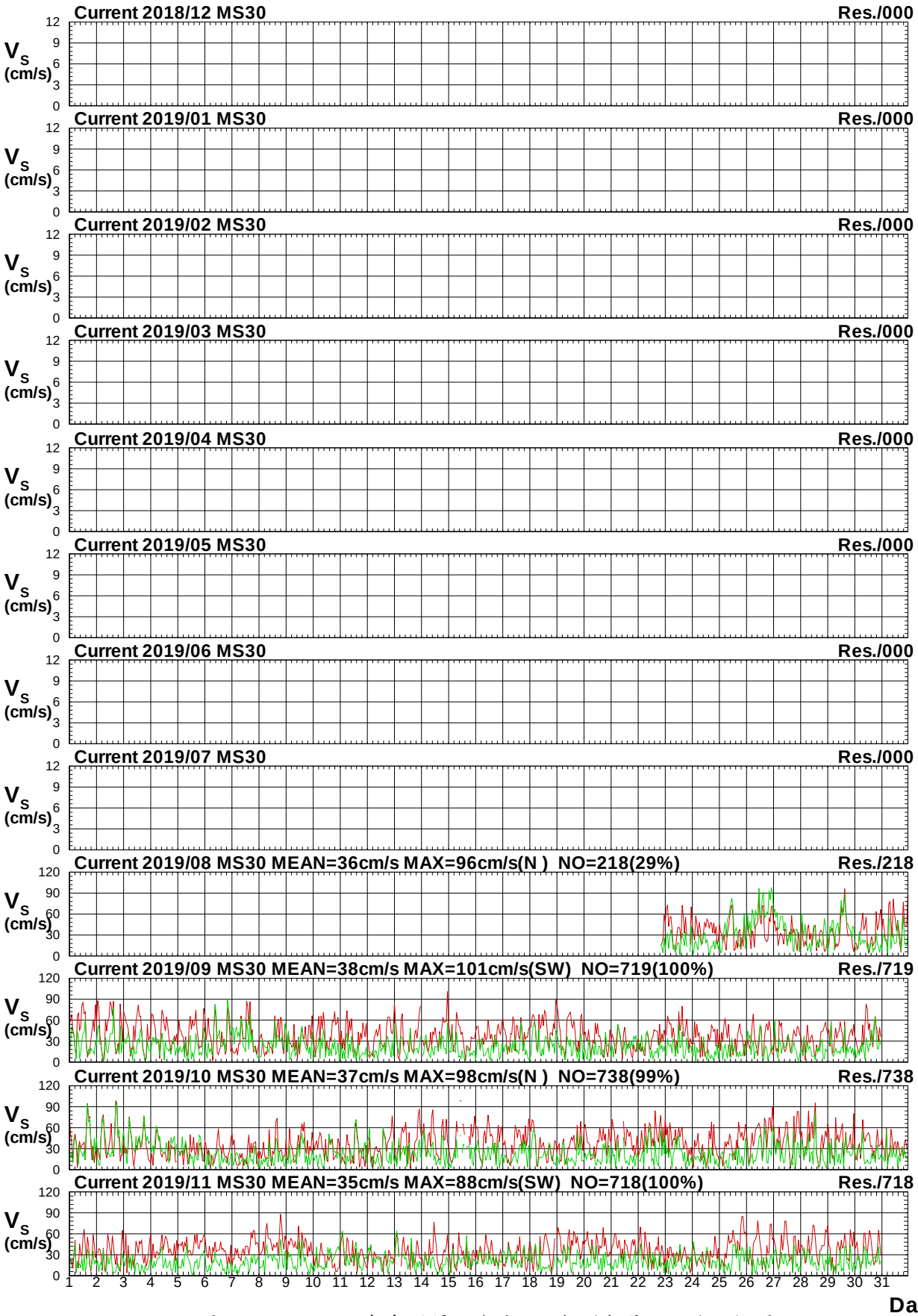


圖4.3.10a　2019年每月馬祖海域3站觀測與殘流流速比較圖

C18CMS30.1H0 C18CMS30.1HR C191MS30.1H0 C191MS30.1HR C192MS30.1H0 C192MS30.1HR
C193MS30.1H0 C193MS30.1HR C194MS30.1H0 C194MS30.1HR C195MS30.1H0 C195MS30.1HR

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Current Direction in Ma-Tsu Harbor of MS30 at 2019

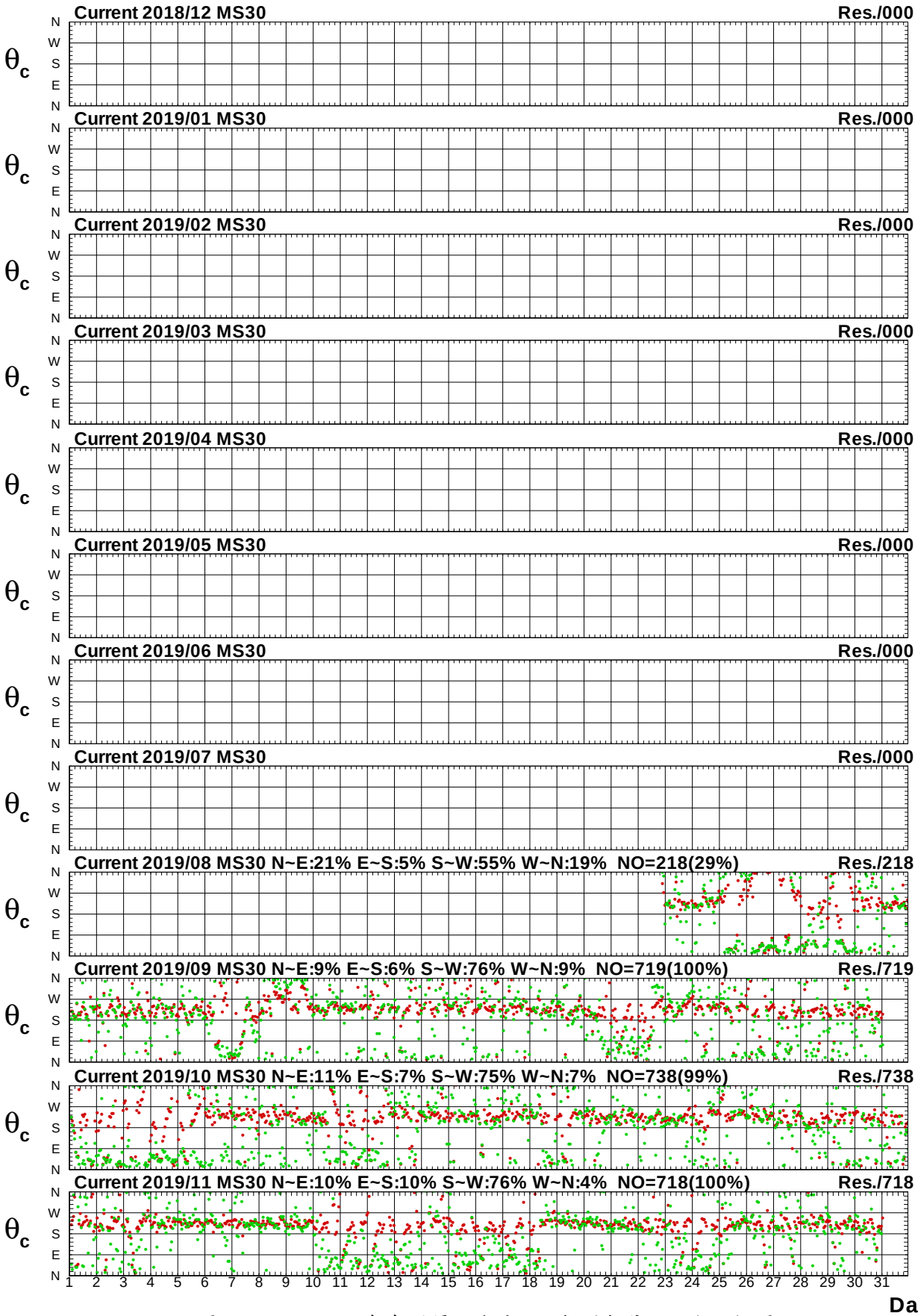


圖4.3.10b　2019年每月馬祖海域3站觀測與殘流流向比較圖

C18CMS30.1H0 C18CMS30.1HR C191MS30.1H0 C191MS30.1HR C192MS30.1H0 C192MS30.1HR
C193MS30.1H0 C193MS30.1HR C194MS30.1H0 C194MS30.1HR C195MS30.1H0 C195MS30.1HR

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Current Speed in Ma-Tsu Harbor of MS40 at 2019

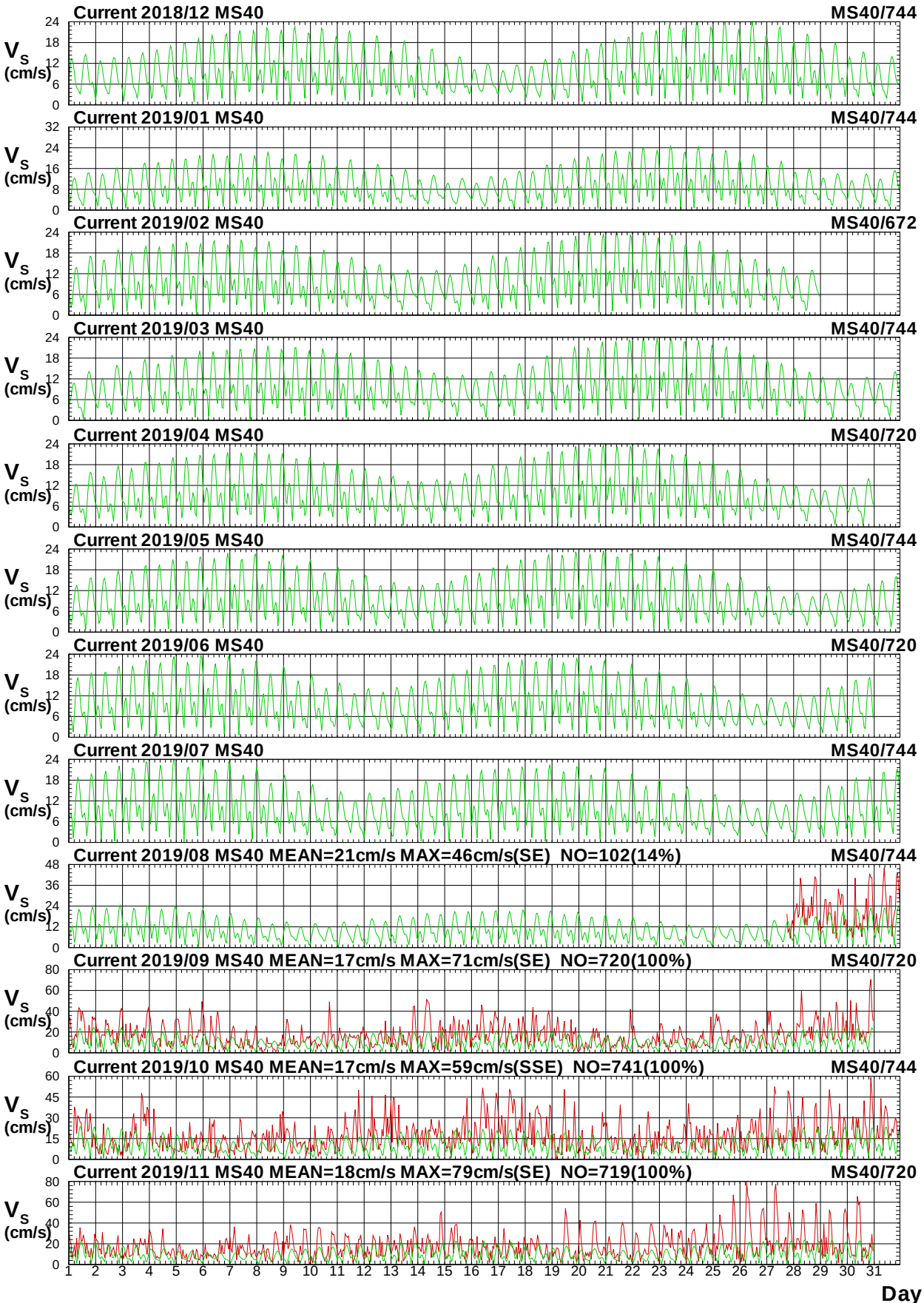


圖4.3.11a　2019年每月馬祖海域4站觀測與潮流流速比較圖

C18CMS40.1H0 C18CMS40.1HD C191MS40.1H0 C191MS40.1HD C192MS40.1H0 C192MS40.1HD
C193MS40.1H0 C193MS40.1HD C194MS40.1H0 C194MS40.1HD C195MS40.1H0 C195MS40.1HD

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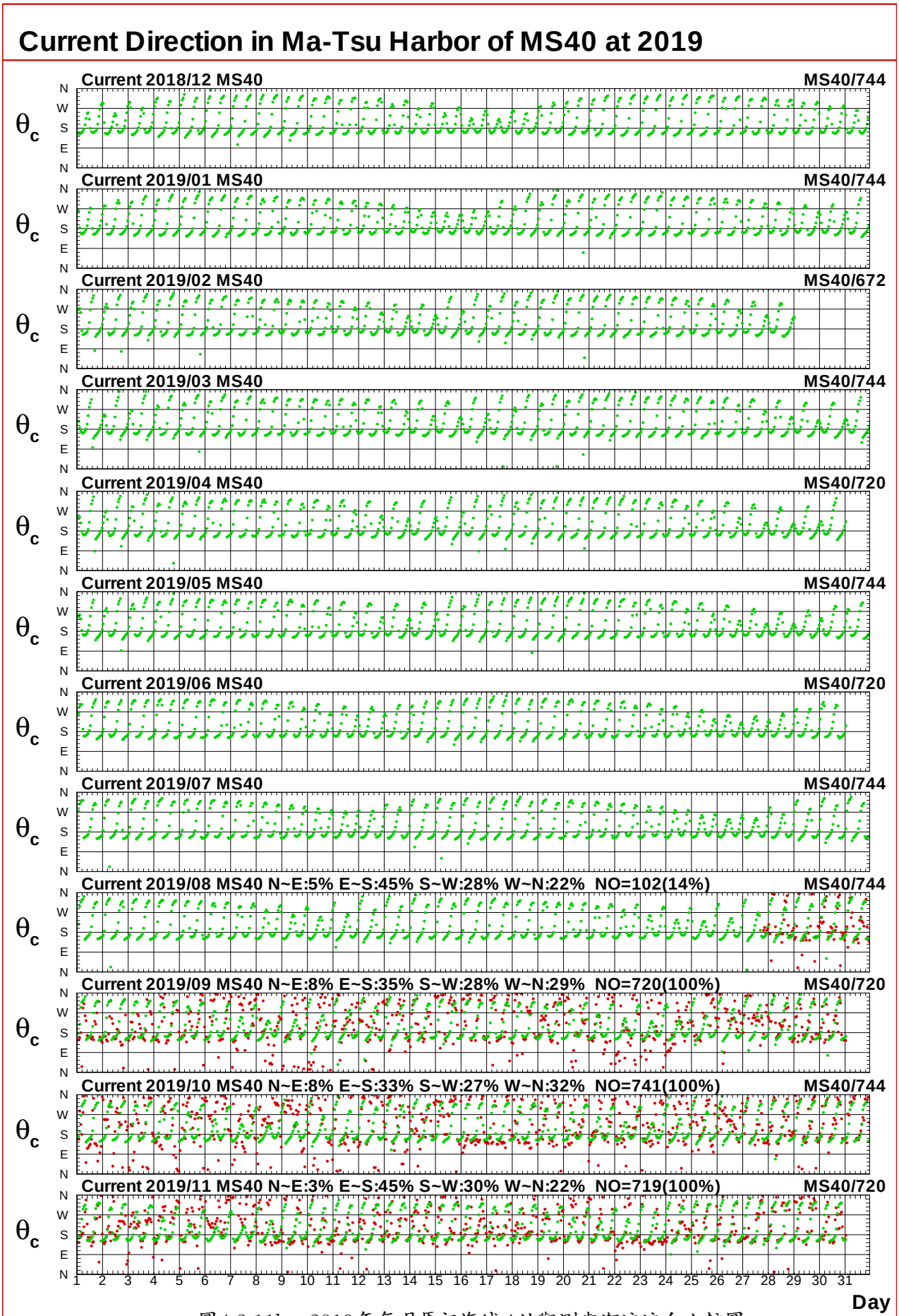


圖4.3.11b　2019年每月馬祖海域4站觀測與潮流流向比較圖

C18CMS40.1H0 C18CMS40.1HD C191MS40.1H0 C191MS40.1HD C192MS40.1H0 C192MS40.1HD
C193MS40.1H0 C193MS40.1HD C194MS40.1H0 C194MS40.1HD C195MS40.1H0 C195MS40.1HD

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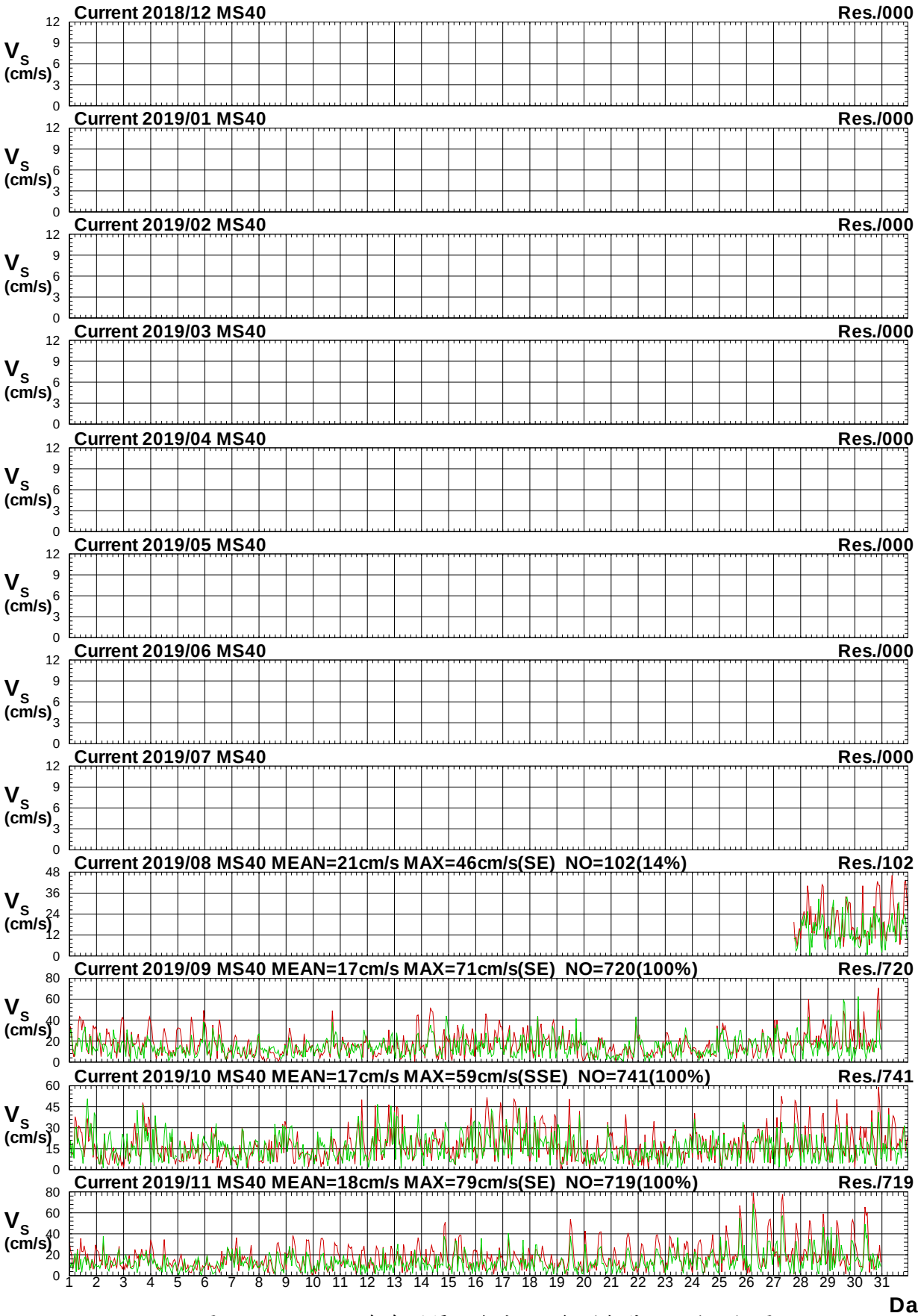


圖4.3.12a　2019年每月馬祖海域4站觀測與殘流流速比較圖

C18CMS40.1H0 C18CMS40.1HR C191MS40.1H0 C191MS40.1HR C192MS40.1H0 C192MS40.1HR
C193MS40.1H0 C193MS40.1HR C194MS40.1H0 C194MS40.1HR C195MS40.1H0 C195MS40.1HR

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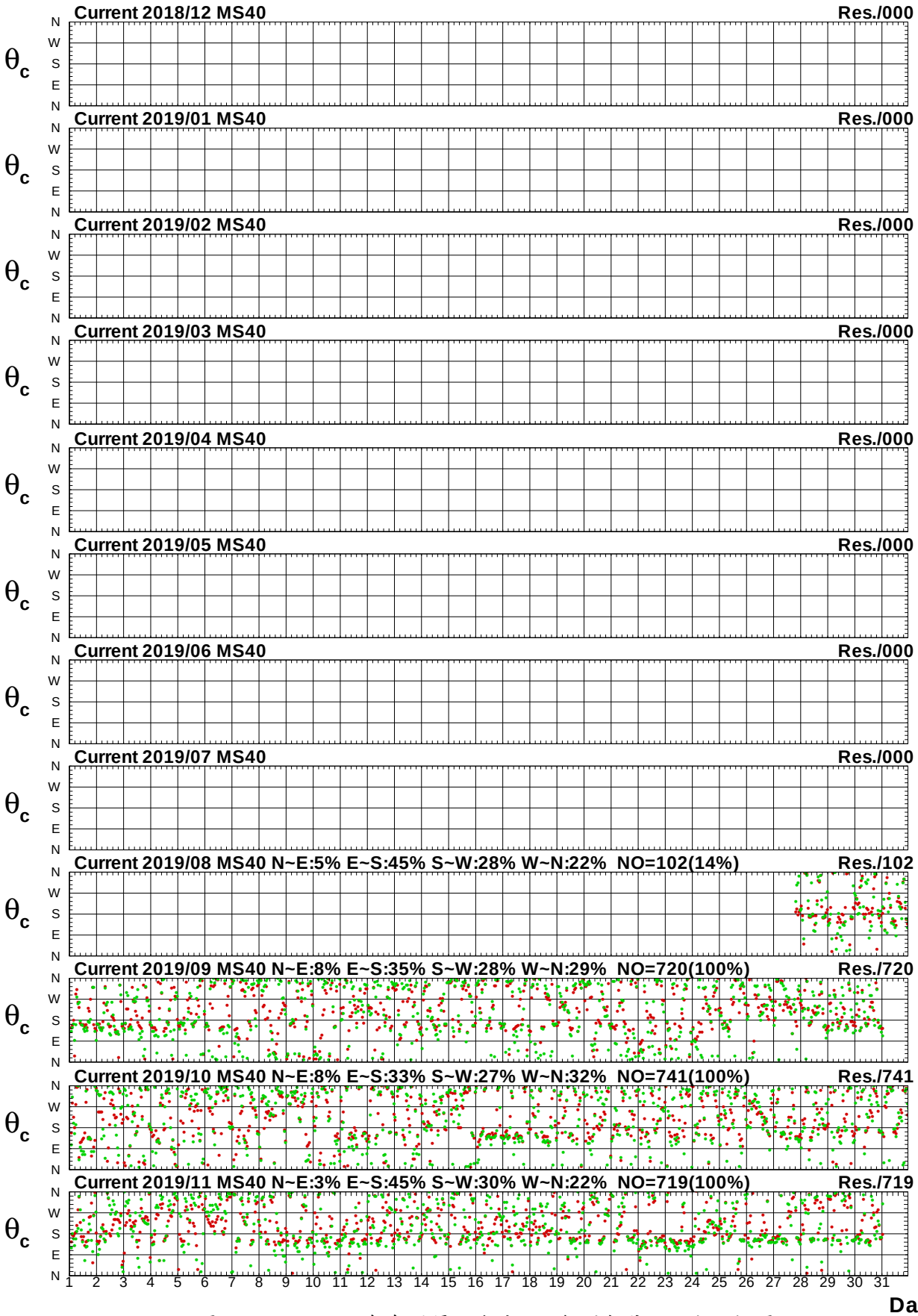


圖4.3.12b　2019年每月馬祖海域4站觀測與殘流流向比較圖

C18CMS40.1H0 C18CMS40.1HR C191MS40.1H0 C191MS40.1HR C192MS40.1H0 C192MS40.1HR
C193MS40.1H0 C193MS40.1HR C194MS40.1H0 C194MS40.1HR C195MS40.1H0 C195MS40.1HR

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4.4　2019 年馬祖海域各測站觀測海流與計算潮流(殘流)向量分佈圖

Distribution of Current Vectores

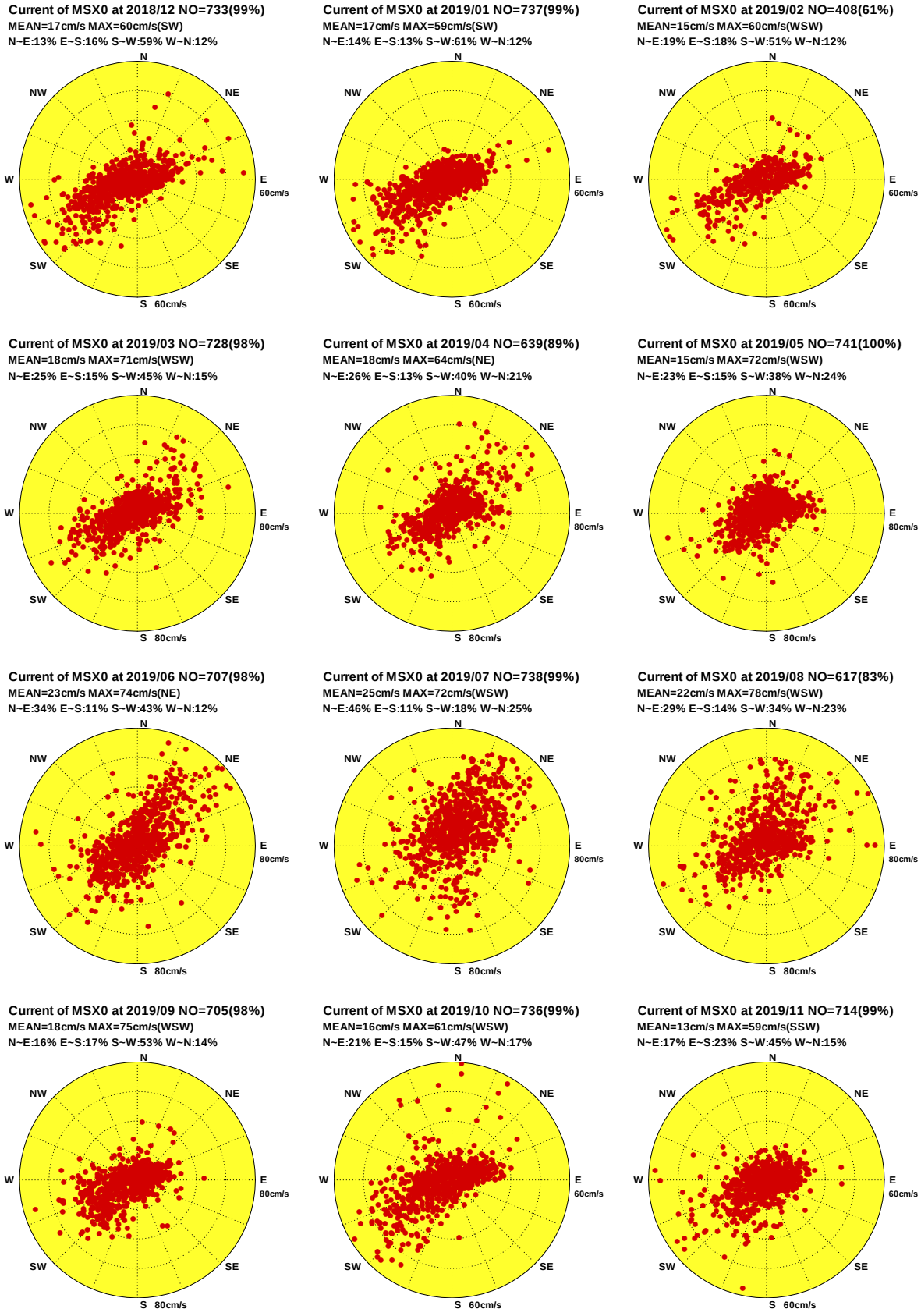


圖4.4.1a 2019年馬祖海域每月測站 X 觀測海流向量分佈圖

C18CMSX0.1H0 C191MSX0.1H0 C192MSX0.1H0 C193MSX0.1H0 C194MSX0.1H0 C195MSX0.1H0
C196MSX0.1H0 C197MSX0.1H0 C198MSX0.1H0 C199MSX0.1H0 C19AMSX0.1H0 C19BMSX0.1H0

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Distribution of Current Vectores

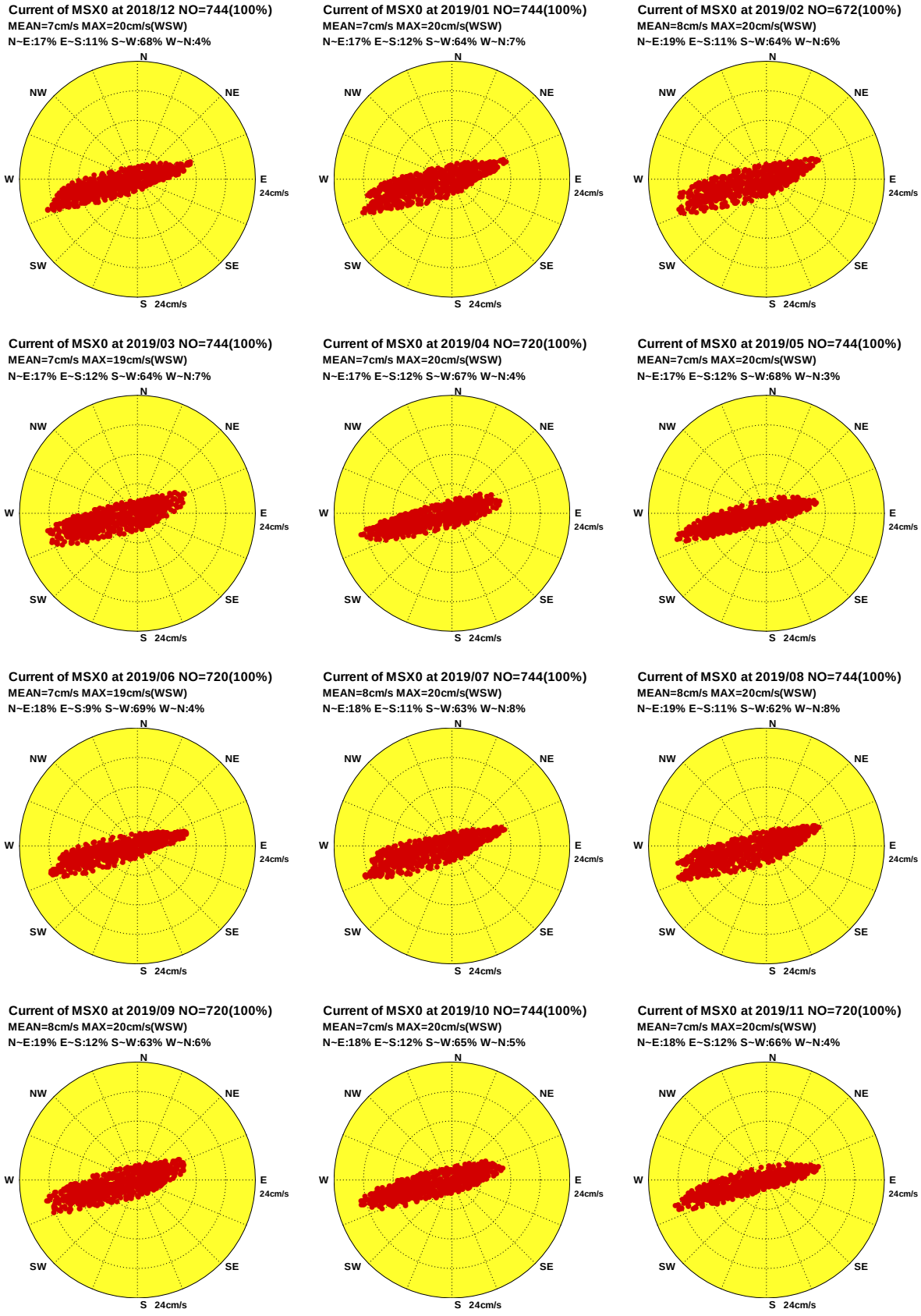


圖4.4.1b 2019年馬祖海域每月測站 X 計算潮流向量分佈圖

Distribution of Current Vectores

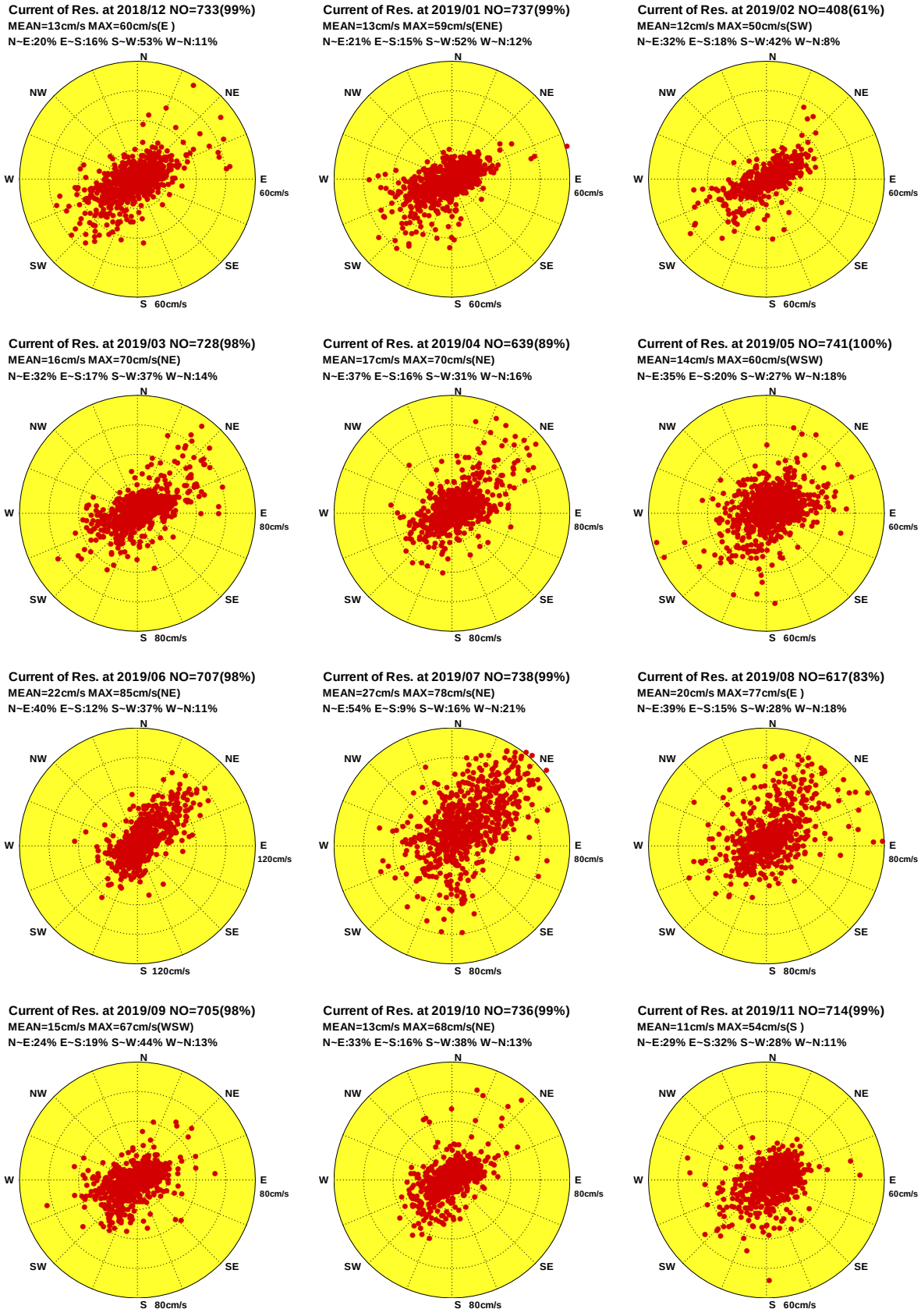


圖4.4.1c 2019年馬祖海域每月測站 X 計算殘流向量分佈圖

Distribution of Current Vectores

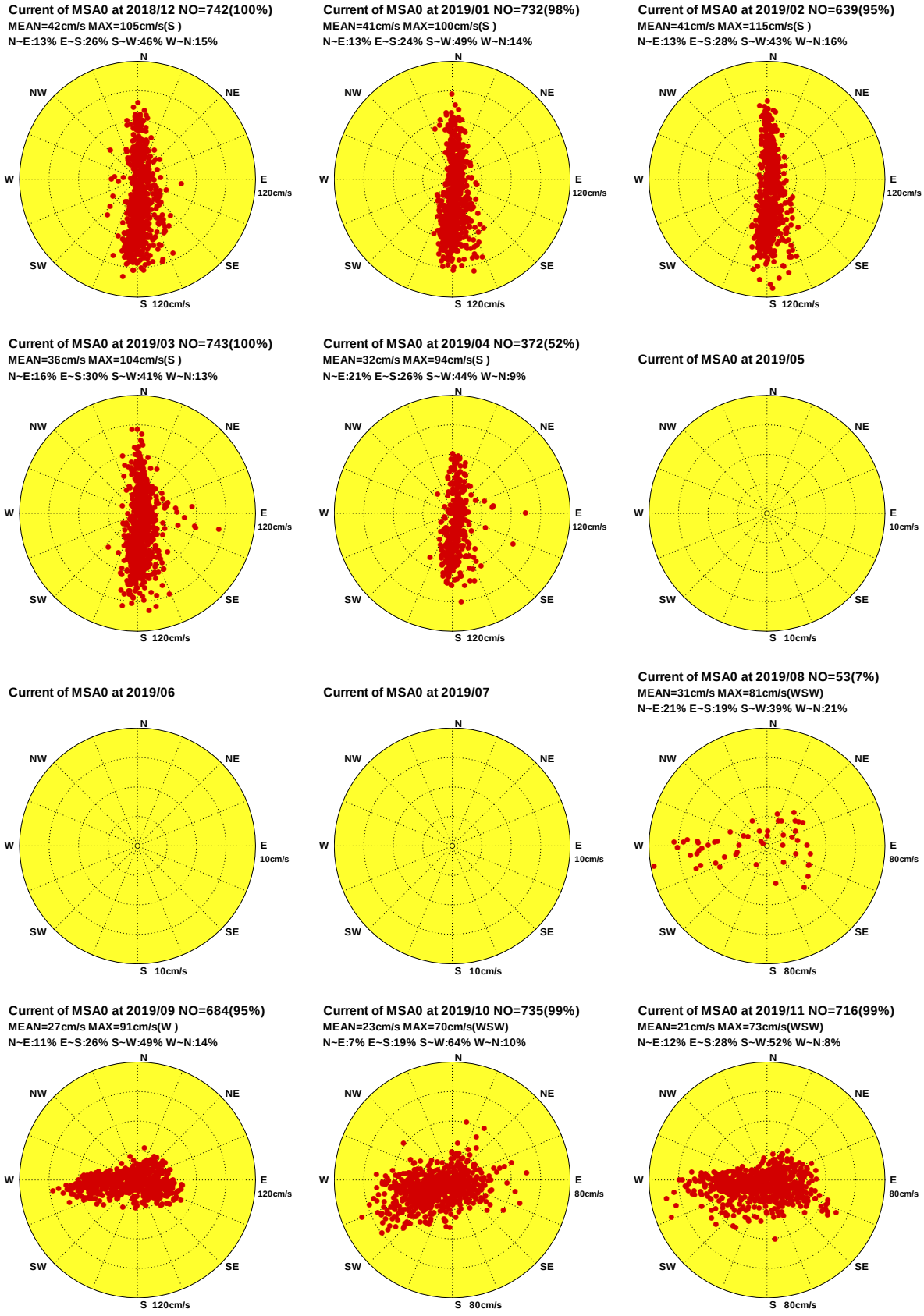


圖4.4.2a 2019年馬祖海域每月測站 A 觀測海流向量分佈圖

Distribution of Current Vectores

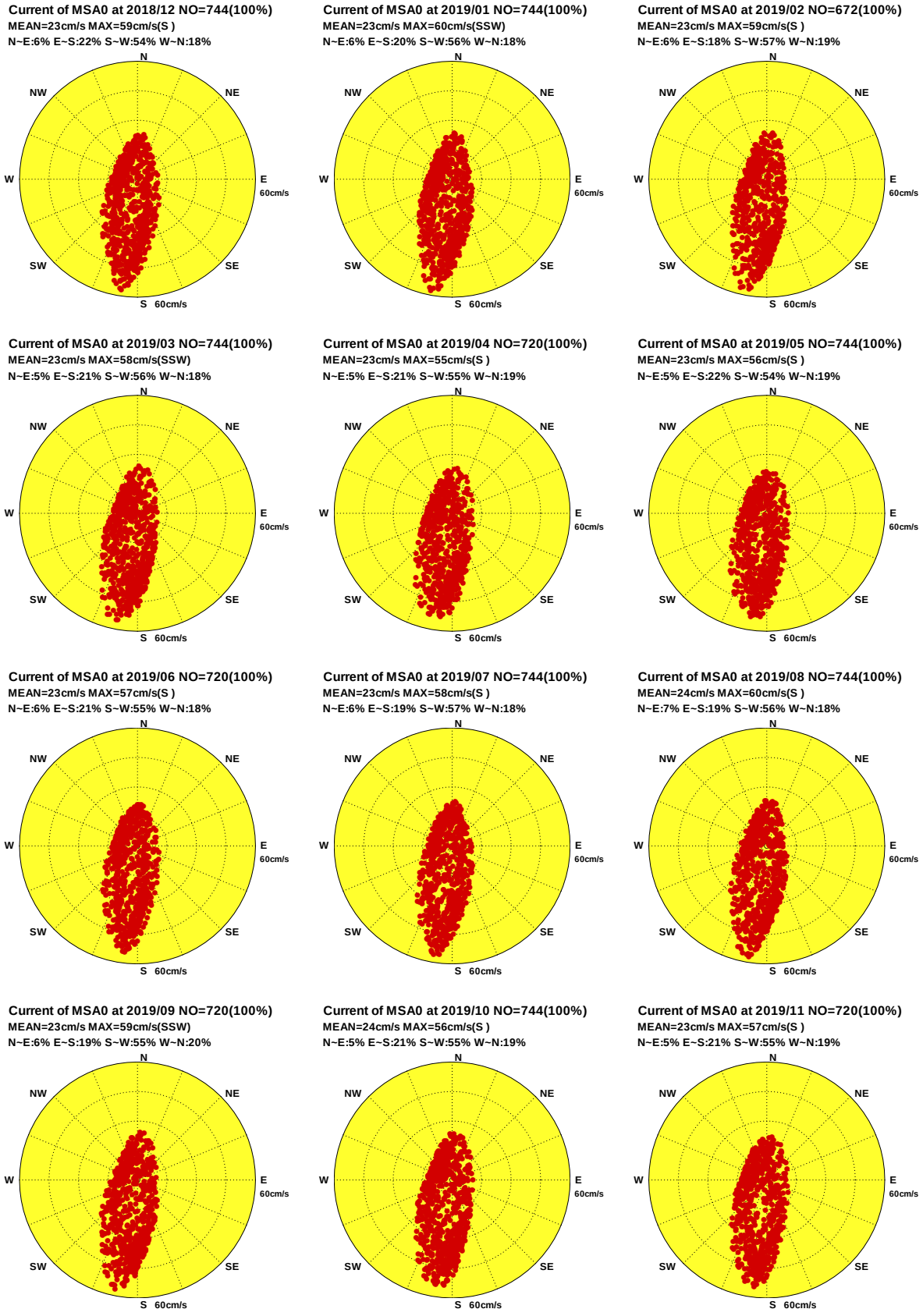


圖4.4.2b 2019年馬祖海域每月測站 A 計算潮流向量分佈圖

Distribution of Current Vectores

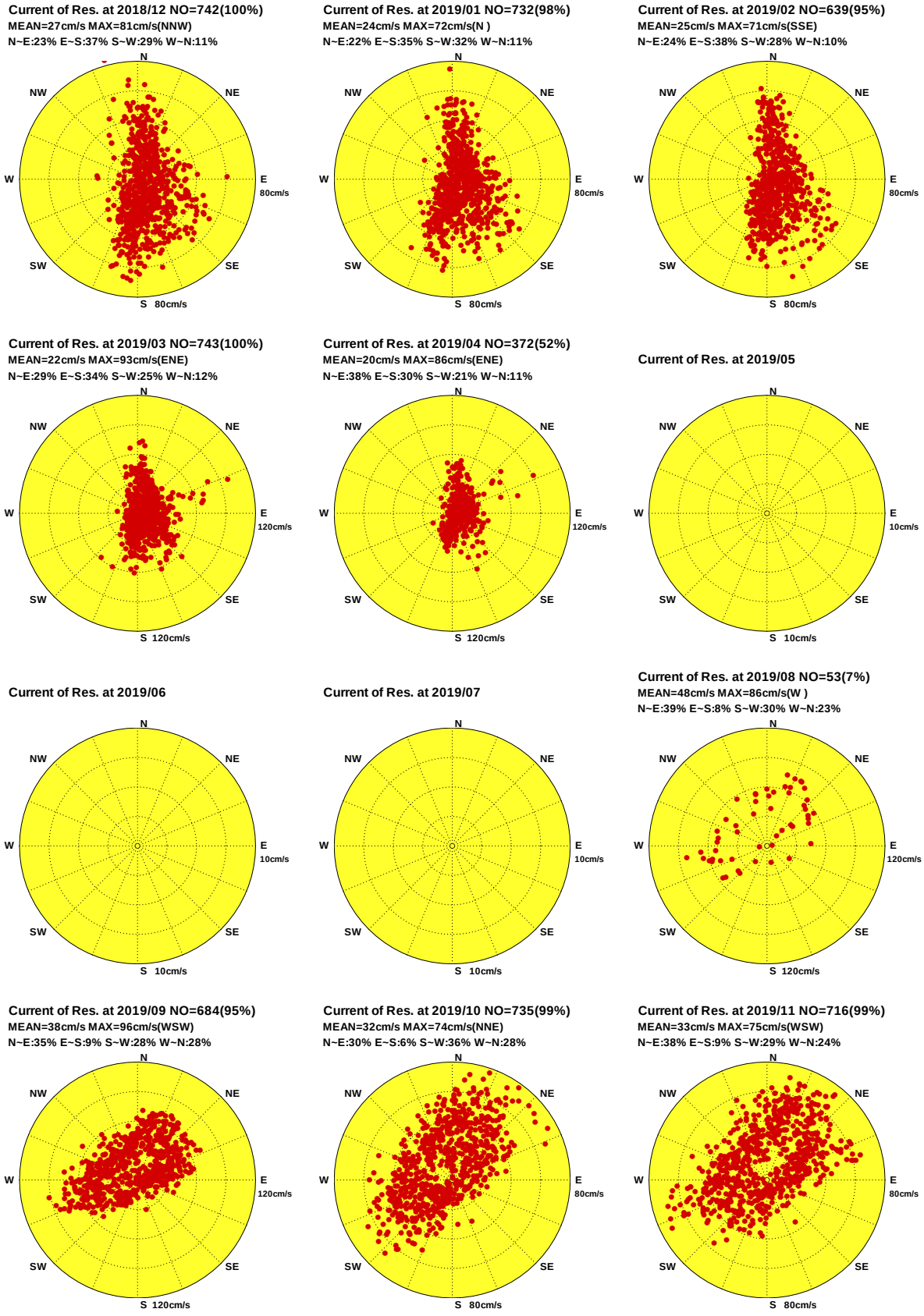


圖4.4.2c 2019年馬祖海域每月測站 A 計算殘流向量分佈圖

Distribution of Current Vectores

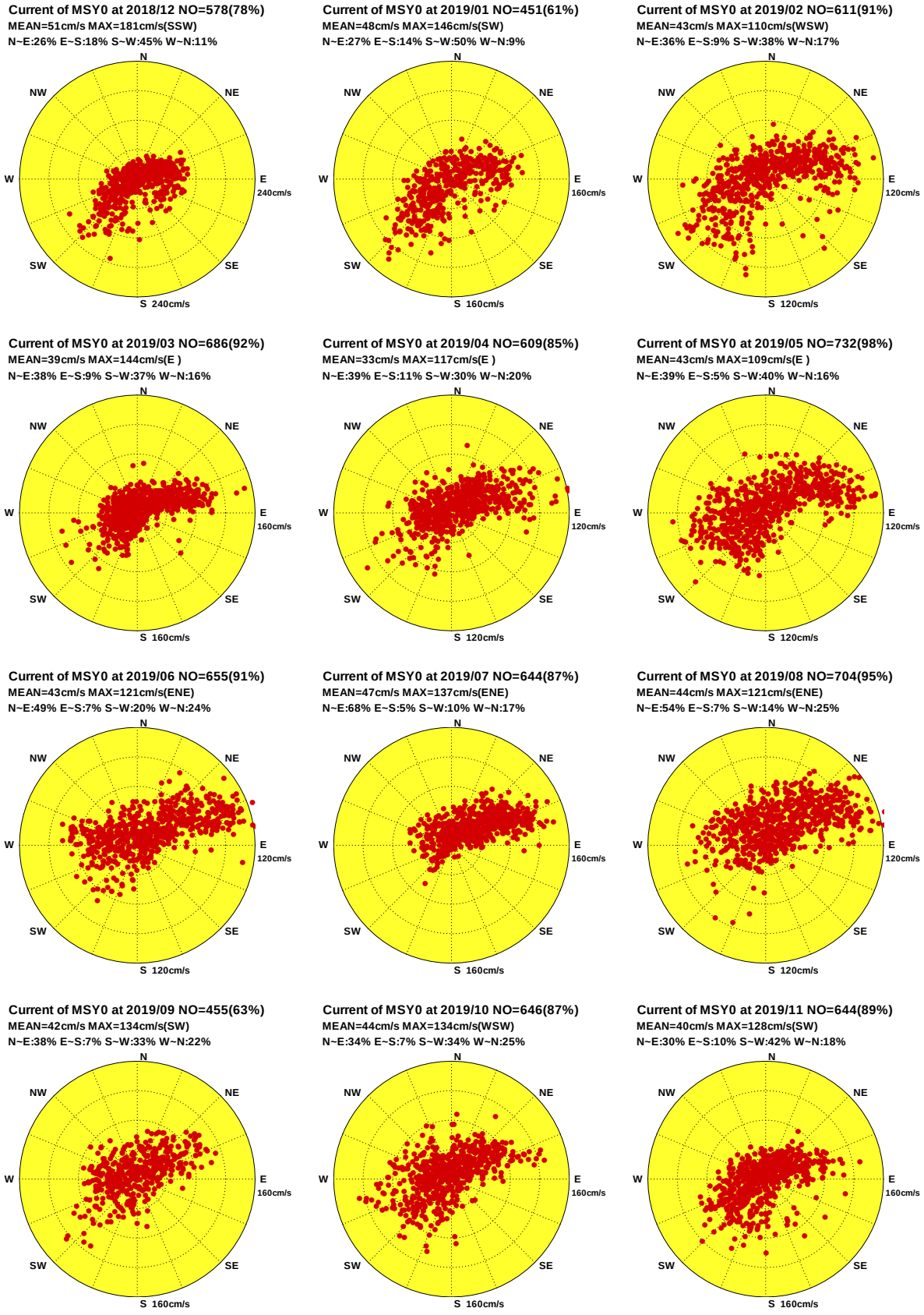


圖4.4.3a 2019年馬祖海域每月測站 Y 觀測海流向量分佈圖

C18CMSY0.1H0 C191MSY0.1H0 C192MSY0.1H0 C193MSY0.1H0 C194MSY0.1H0 C195MSY0.1H0
C196MSY0.1H0 C197MSY0.1H0 C198MSY0.1H0 C199MSY0.1H0 C19AMSY0.1H0 C19BMSY0.1H0

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Distribution of Current Vectores

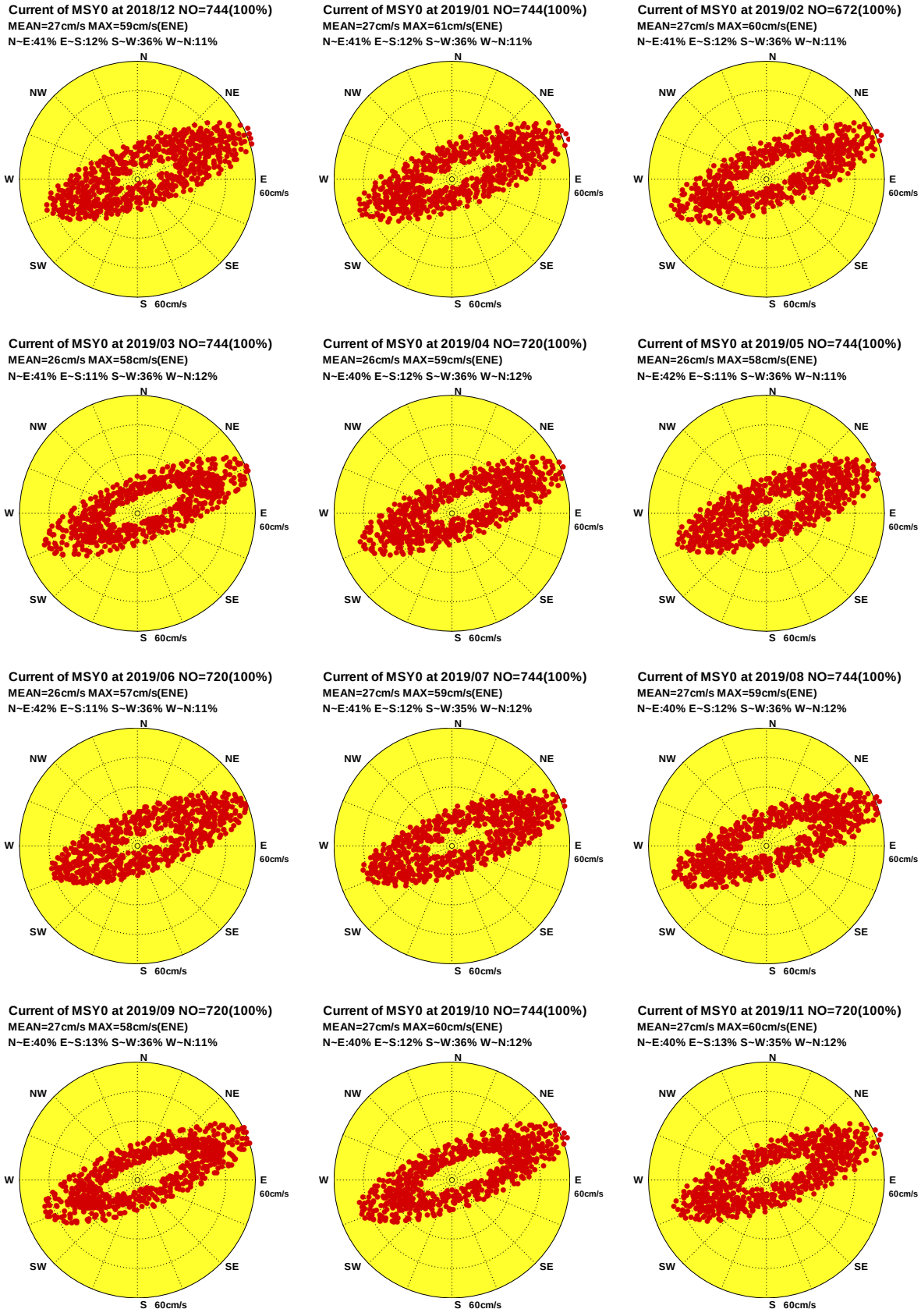


圖4.4.3b 2019年馬祖海域每月測站 Y 計算潮流向量分佈圖

Distribution of Current Vectores

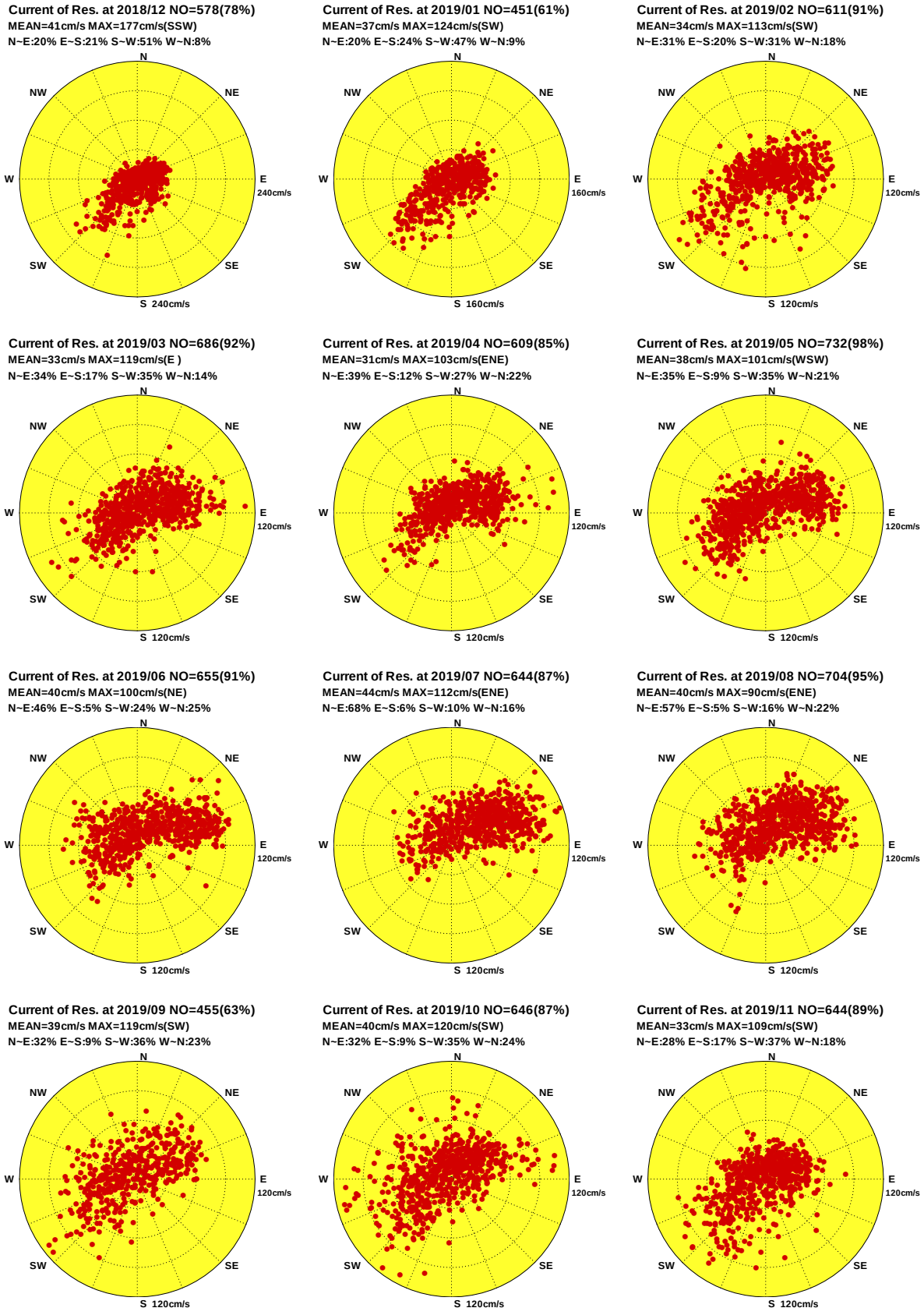


圖4.4.3c 2019年馬祖海域每月測站 Y 計算殘流向量分佈圖

Distribution of Current Vectores

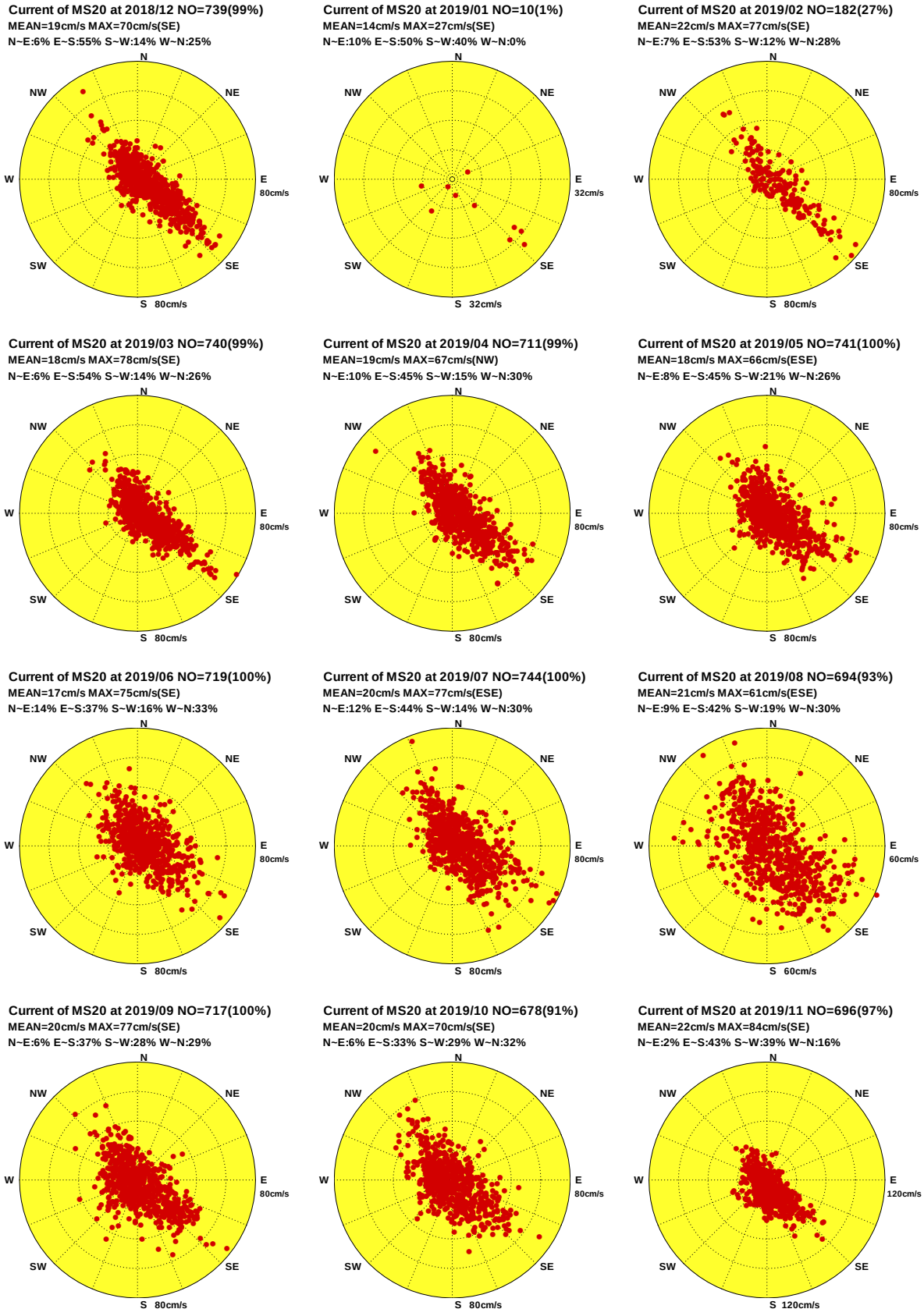


圖4.4.4a 2019年馬祖海域每月測站2觀測海流向量分佈圖

C18CMS20.1H0 C191MS20.1H0 C192MS20.1H0 C193MS20.1H0 C194MS20.1H0 C195MS20.1H0
C196MS20.1H0 C197MS20.1H0 C198MS20.1H0 C199MS20.1H0 C19AMS20.1H0 C19BMS20.1H0

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Distribution of Current Vectores

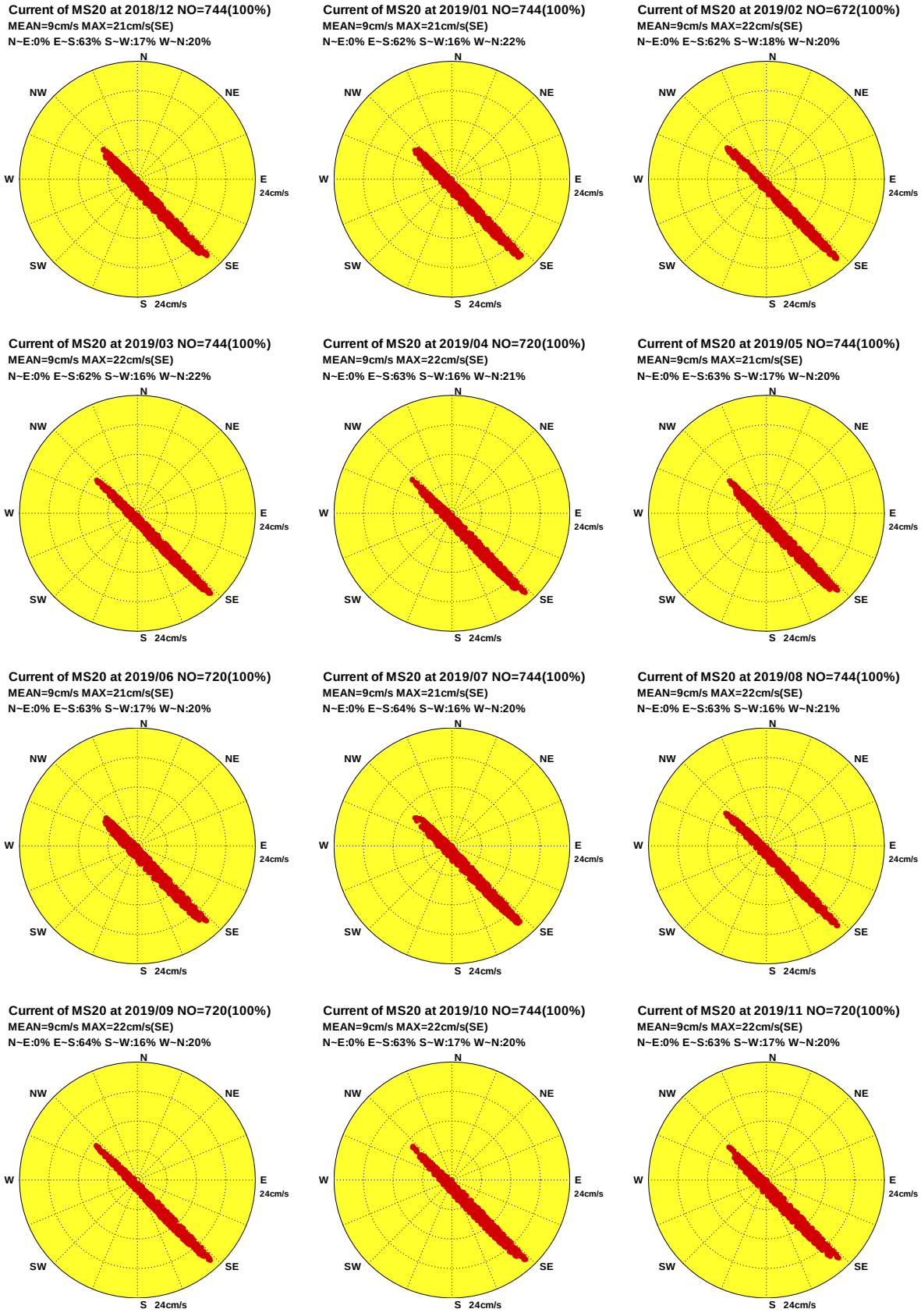


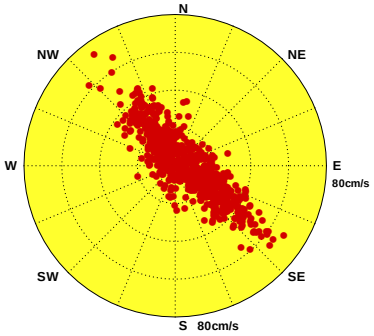
圖4.4.4b 2019年馬祖海域每月測站2計算潮流向量分佈圖

C18CMS20.1HD C191MS20.1HD C192MS20.1HD C193MS20.1HD C194MS20.1HD C195MS20.1HD
C196MS20.1HD C197MS20.1HD C198MS20.1HD C199MS20.1HD C19AMS20.1HD C19BMS20.1HD

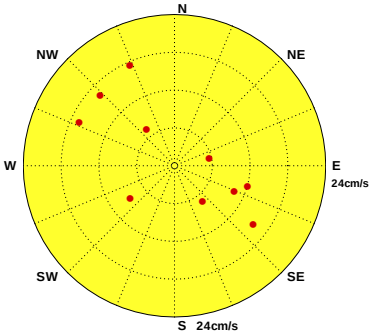
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Distribution of Current Vectores

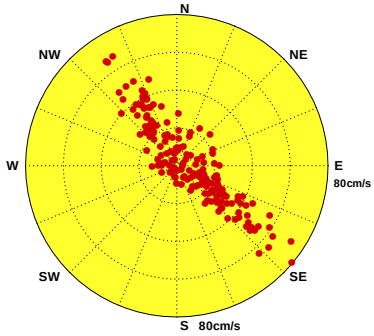
Current of Res. at 2018/12 NO=739(99%)
MEAN=21cm/s MAX=72cm/s(NW)
N~E:7% E~S:47% S~W:9% W~N:37%



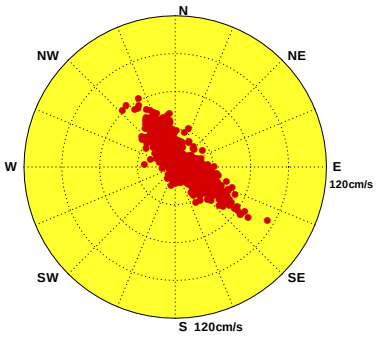
Current of Res. at 2019/01 NO=10(1%)
MEAN=12cm/s MAX=17cm/s(NNW)
N~E:10% E~S:40% S~W:10% W~N:40%



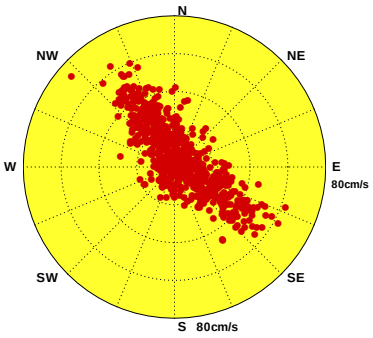
Current of Res. at 2019/02 NO=182(27%)
MEAN=25cm/s MAX=80cm/s(SE)
N~E:7% E~S:49% S~W:9% W~N:35%



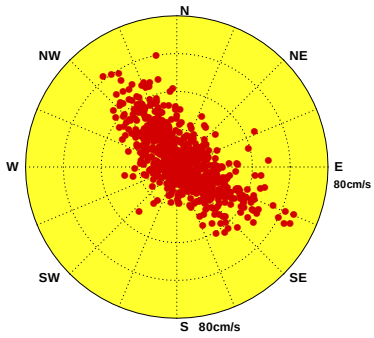
Current of Res. at 2019/03 NO=740(99%)
MEAN=21cm/s MAX=84cm/s(SE)
N~E:6% E~S:48% S~W:9% W~N:37%



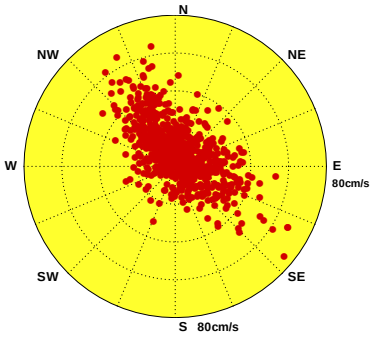
Current of Res. at 2019/04 NO=711(99%)
MEAN=21cm/s MAX=72cm/s(NW)
N~E:11% E~S:38% S~W:12% W~N:39%



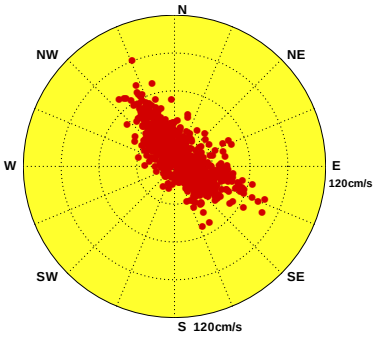
Current of Res. at 2019/05 NO=741(100%)
MEAN=19cm/s MAX=66cm/s(ESE)
N~E:11% E~S:37% S~W:16% W~N:36%



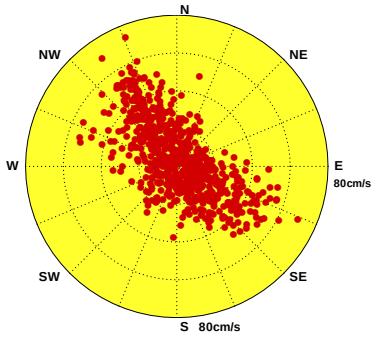
Current of Res. at 2019/06 NO=719(100%)
MEAN=19cm/s MAX=75cm/s(SE)
N~E:18% E~S:30% S~W:10% W~N:42%



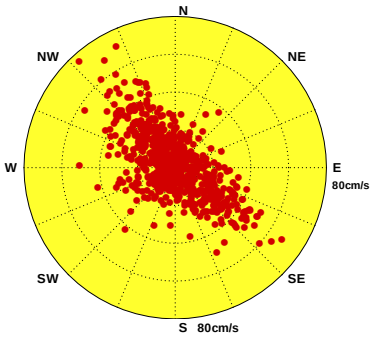
Current of Res. at 2019/07 NO=744(100%)
MEAN=23cm/s MAX=88cm/s(NNW)
N~E:13% E~S:38% S~W:8% W~N:41%



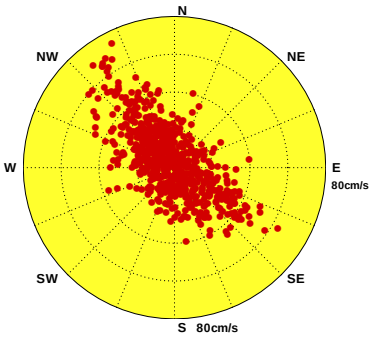
Current of Res. at 2019/08 NO=694(93%)
MEAN=24cm/s MAX=72cm/s(NNW)
N~E:8% E~S:39% S~W:15% W~N:38%



Current of Res. at 2019/09 NO=717(100%)
MEAN=21cm/s MAX=75cm/s(NW)
N~E:8% E~S:32% S~W:22% W~N:38%



Current of Res. at 2019/10 NO=678(91%)
MEAN=22cm/s MAX=72cm/s(NNW)
N~E:8% E~S:28% S~W:22% W~N:42%



Current of Res. at 2019/11 NO=696(97%)
MEAN=22cm/s MAX=78cm/s(SE)
N~E:1% E~S:39% S~W:31% W~N:29%

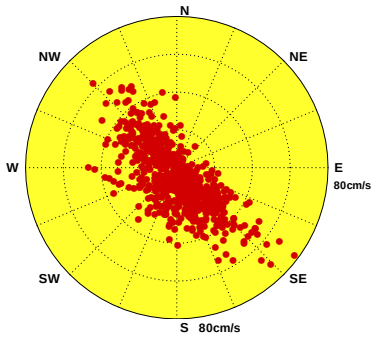


圖4.4.4c 2019年馬祖海域每月測站2計算殘流向量分佈圖

C18CMS20.1HR C191MS20.1HR C192MS20.1HR C193MS20.1HR C194MS20.1HR C195MS20.1HR
C196MS20.1HR C197MS20.1HR C198MS20.1HR C199MS20.1HR C19AMS20.1HR C19BMS20.1HR

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Distribution of Current Vectores

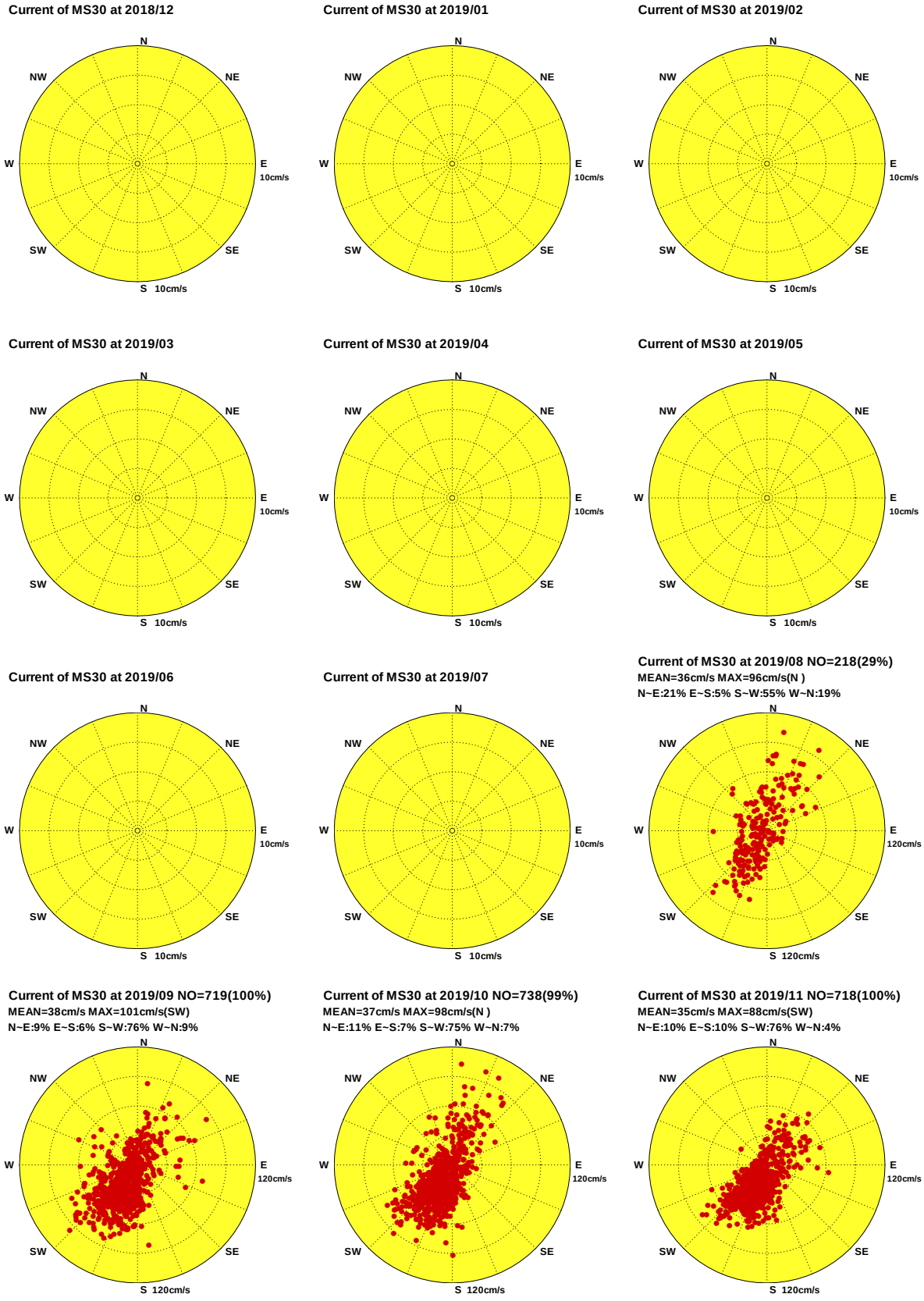


圖4.4.5a 2019年馬祖海域每月測站3觀測海流向量分佈圖

Distribution of Current Vectores

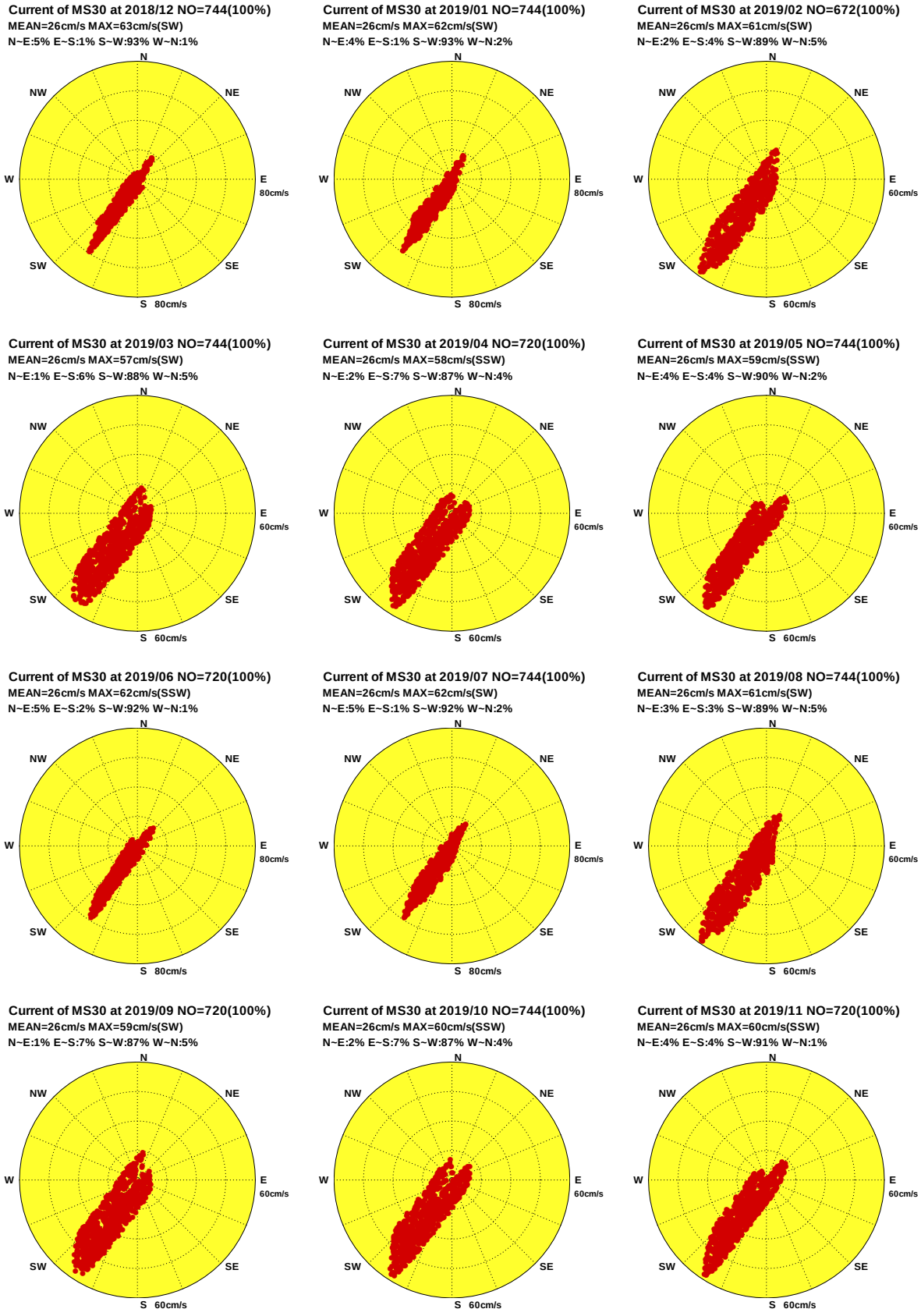


圖4.4.5b 2019年馬祖海域每月測站3計算潮流向量分佈圖

C18CMS30.1HD C191MS30.1HD C192MS30.1HD C193MS30.1HD C194MS30.1HD C195MS30.1HD
C196MS30.1HD C197MS30.1HD C198MS30.1HD C199MS30.1HD C19AMS30.1HD C19BMS30.1HD

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Distribution of Current Vectores

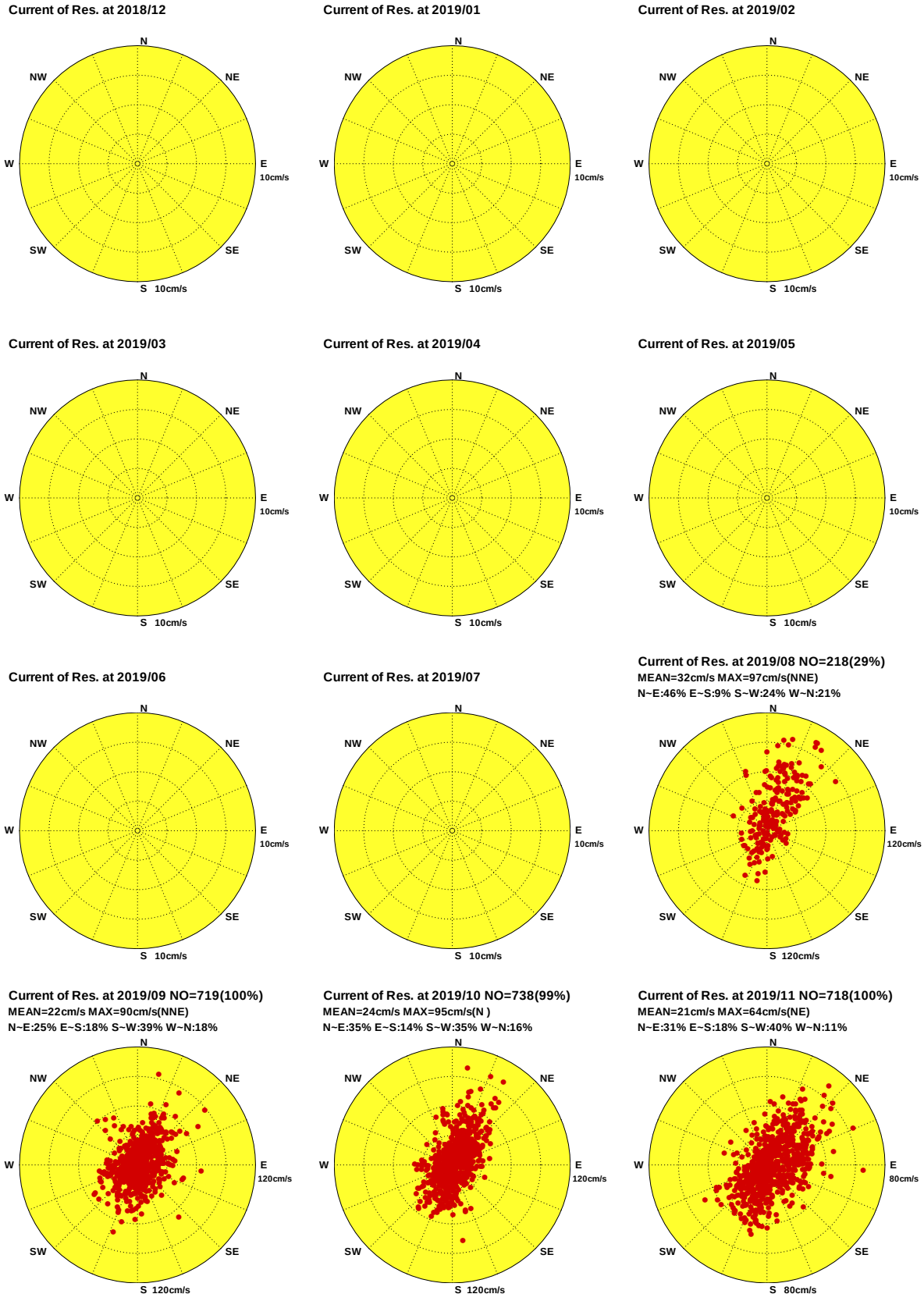


圖4.4.5c 2019年馬祖海域每月測站3計算殘流向量分佈圖

Distribution of Current Vectores

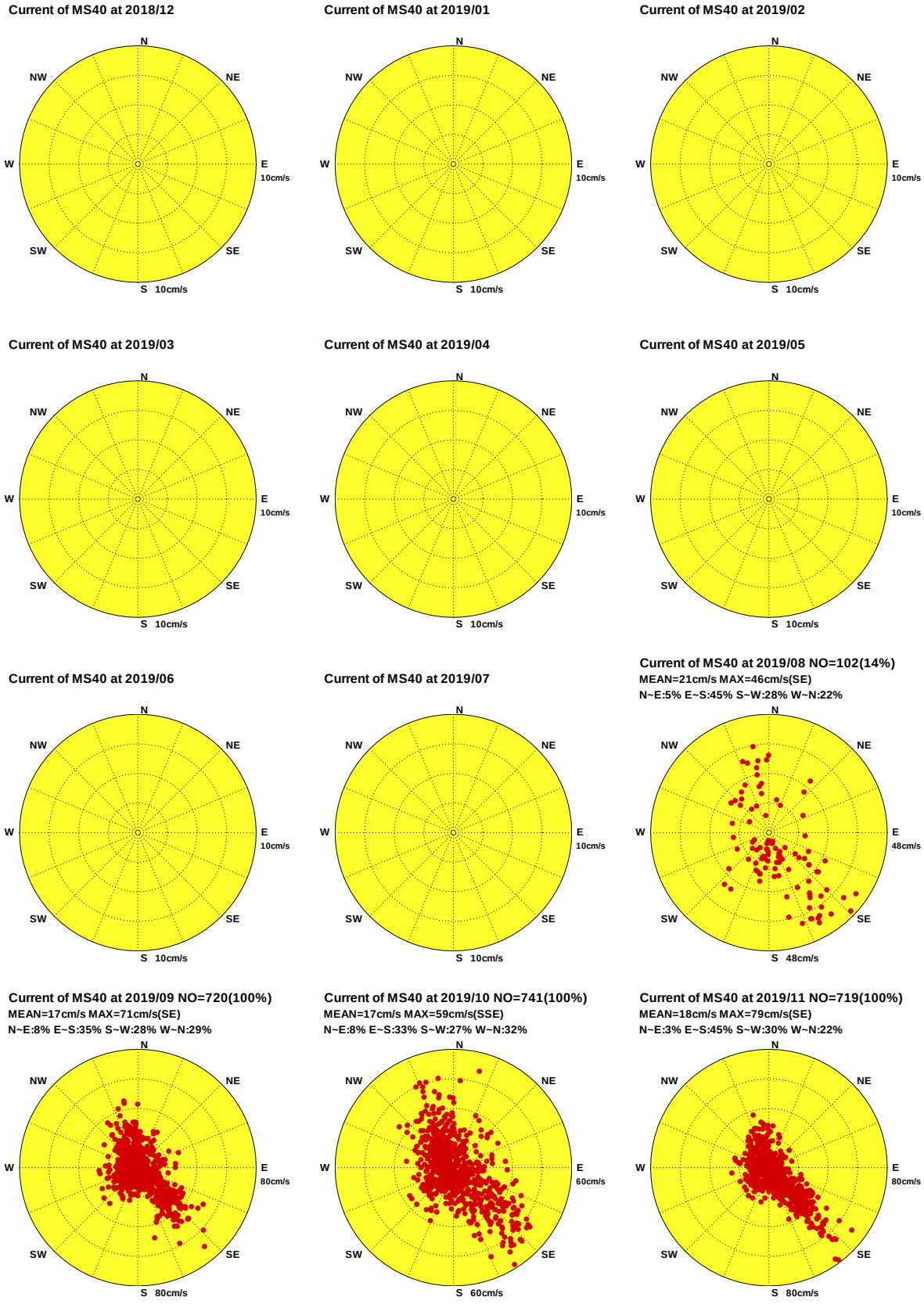


圖4.4.6a 2019年馬祖海域每月測站4觀測海流向量分佈圖

Distribution of Current Vectores

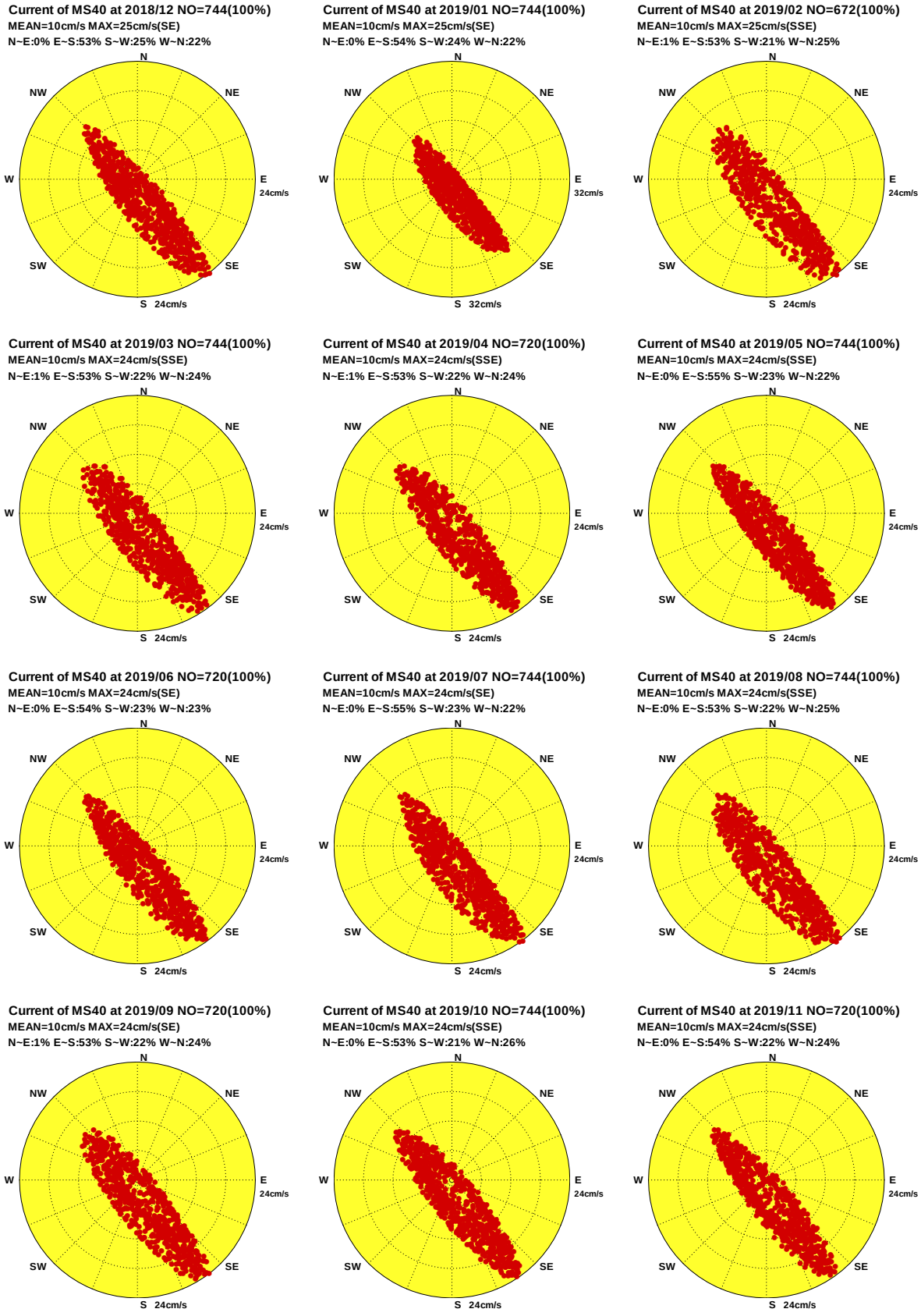


圖4.4.6b 2019年馬祖海域每月測站4計算潮流向量分佈圖

Distribution of Current Vectores

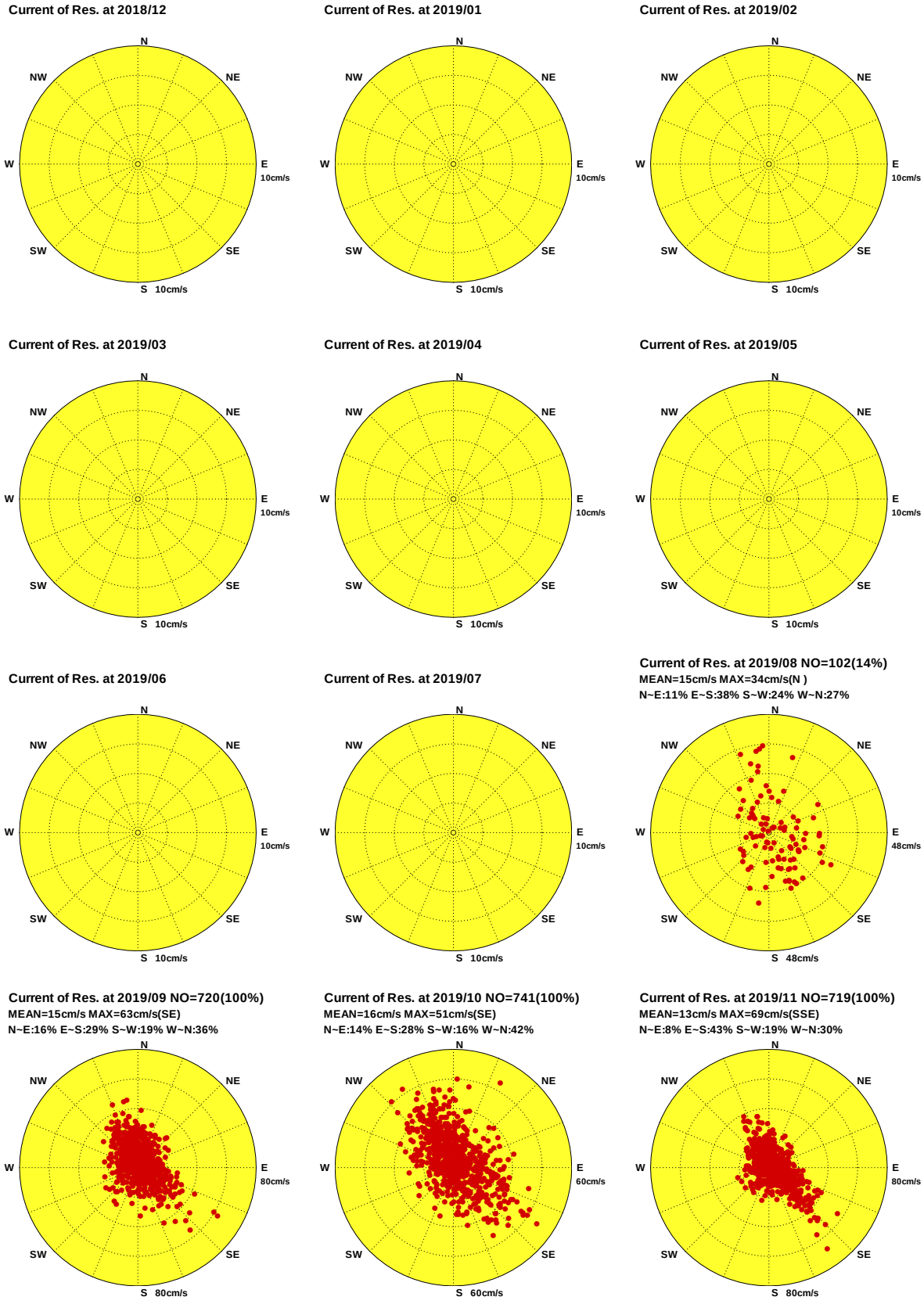


圖4.4.6c 2019年馬祖海域每月測站4計算殘流向量分佈圖

C18CMS40.1HR C191MS40.1HR C192MS40.1HR C193MS40.1HR C194MS40.1HR C195MS40.1HR
C196MS40.1HR C197MS40.1HR C198MS40.1HR C199MS40.1HR C19AMS40.1HR C19BMS40.1HR

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4.5　2019 年馬祖海域各測站觀測海流與計算潮流(殘流)向量行進圖

Progressive Vector Diagram of Current

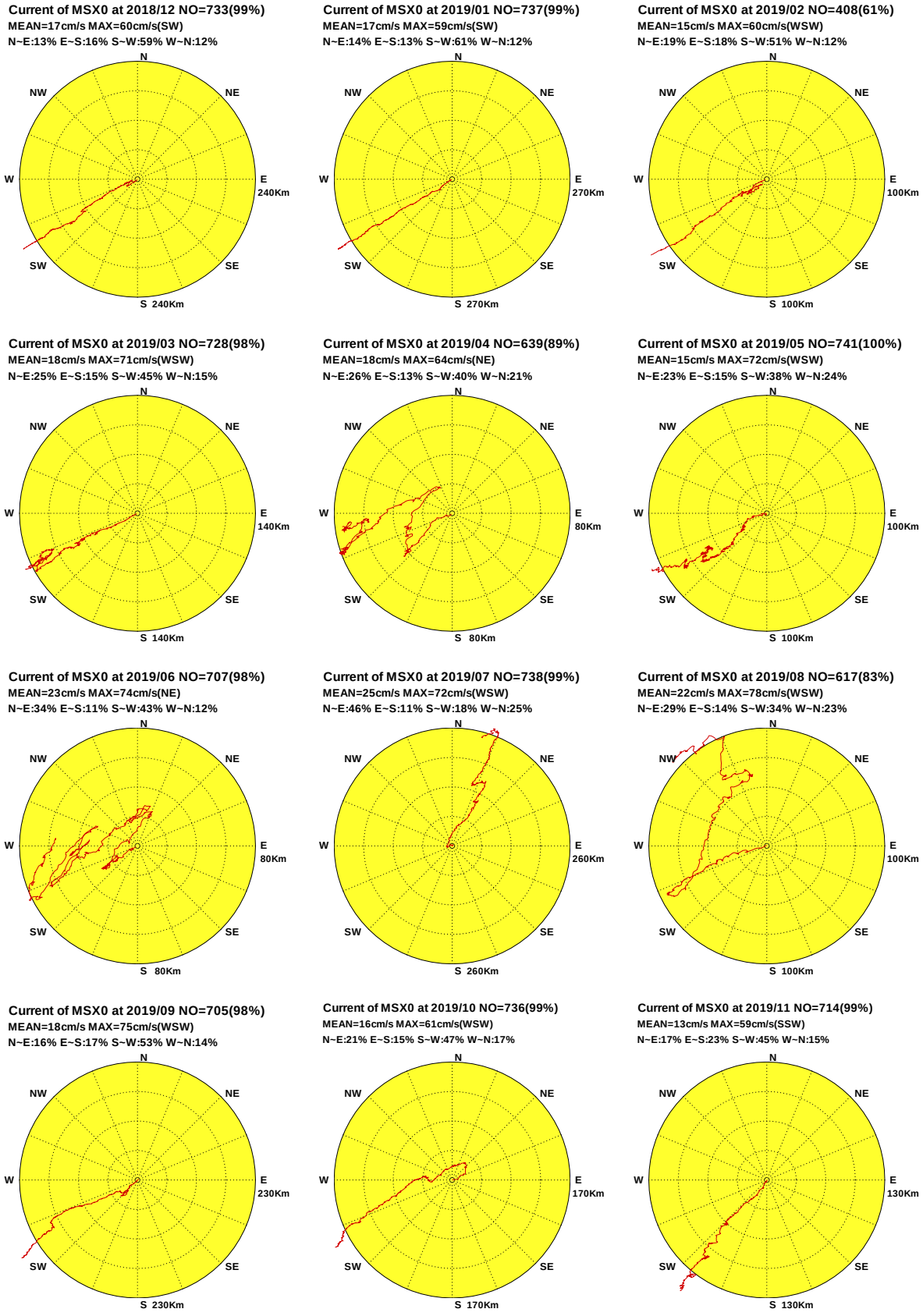


圖4.5.1a 2019年馬祖海域每月測站 X 觀測海流向量行進圖

C18CMSX0.1H0 C191MSX0.1H0 C192MSX0.1H0 C193MSX0.1H0 C194MSX0.1H0 C195MSX0.1H0
C196MSX0.1H0 C197MSX0.1H0 C198MSX0.1H0 C199MSX0.1H0 C19AMSX0.1H0 C19BMSX0.1H0

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Progressive Vector Diagram of Current

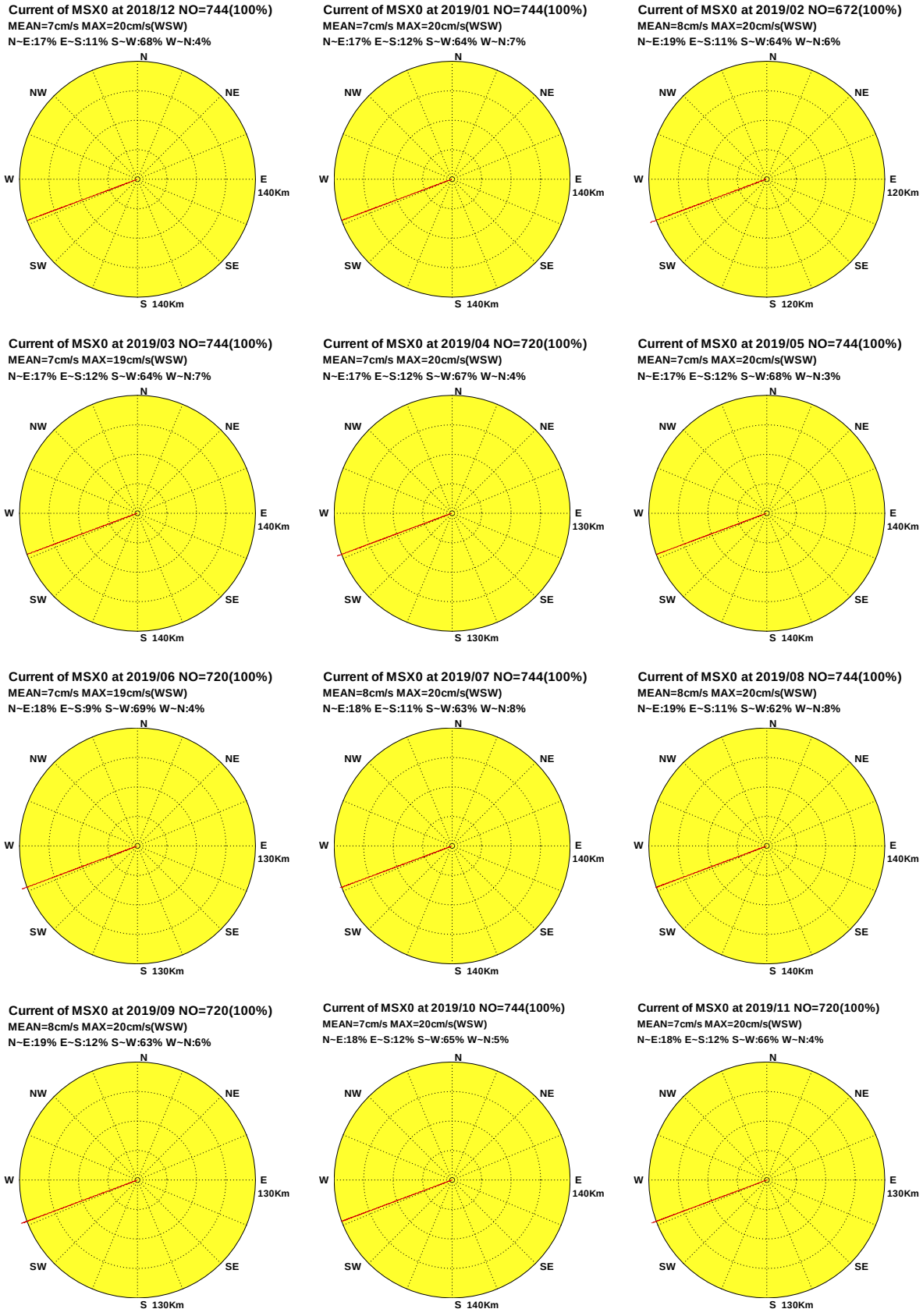


圖4.5.1b 2019年馬祖海域每月測站 X 計算潮流向量行進圖

Progressive Vector Diagram of Current

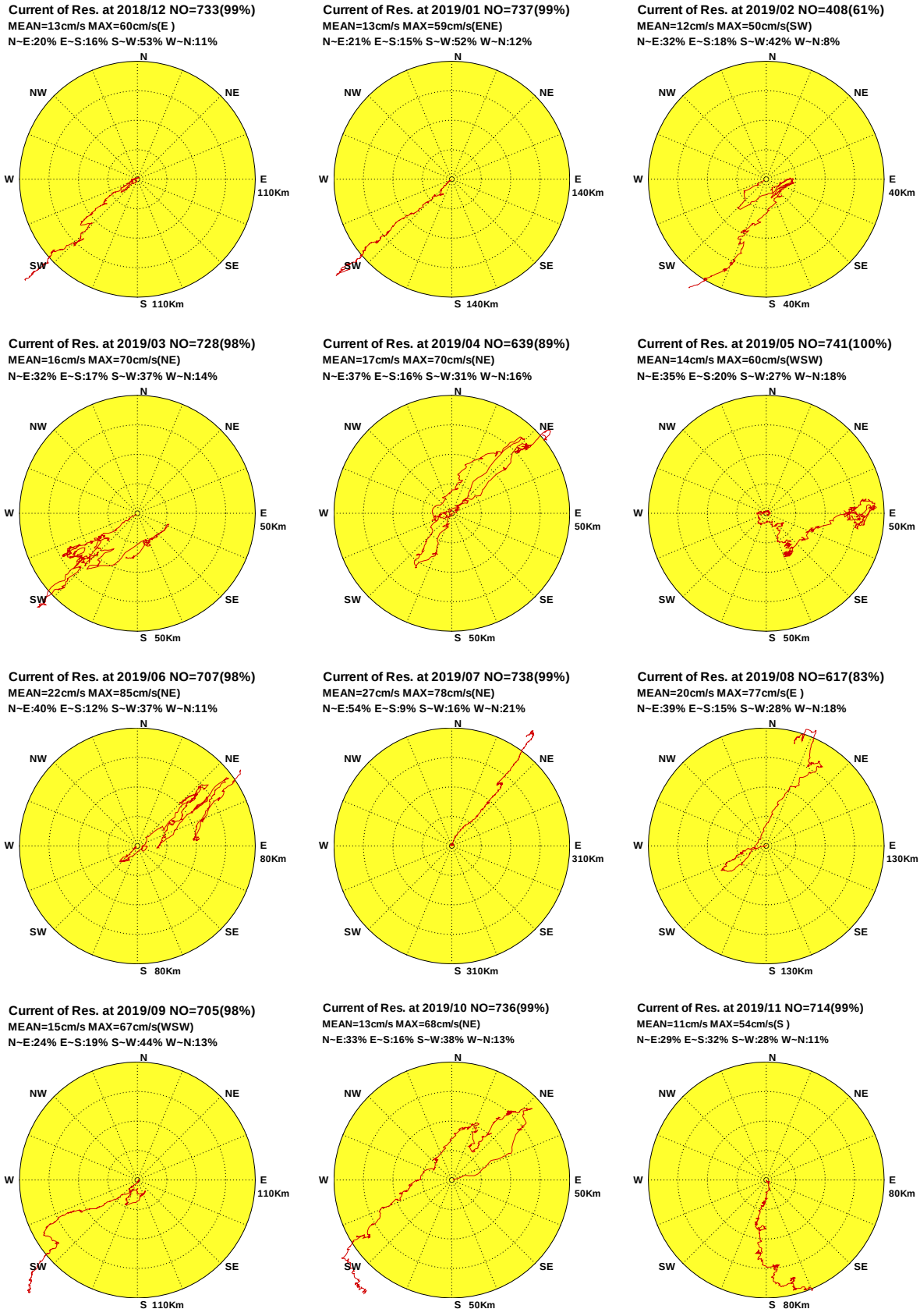


圖4.5.1c 2019年馬祖海域每月測站 X 計算殘流向量行進圖

Progressive Vector Diagram of Current

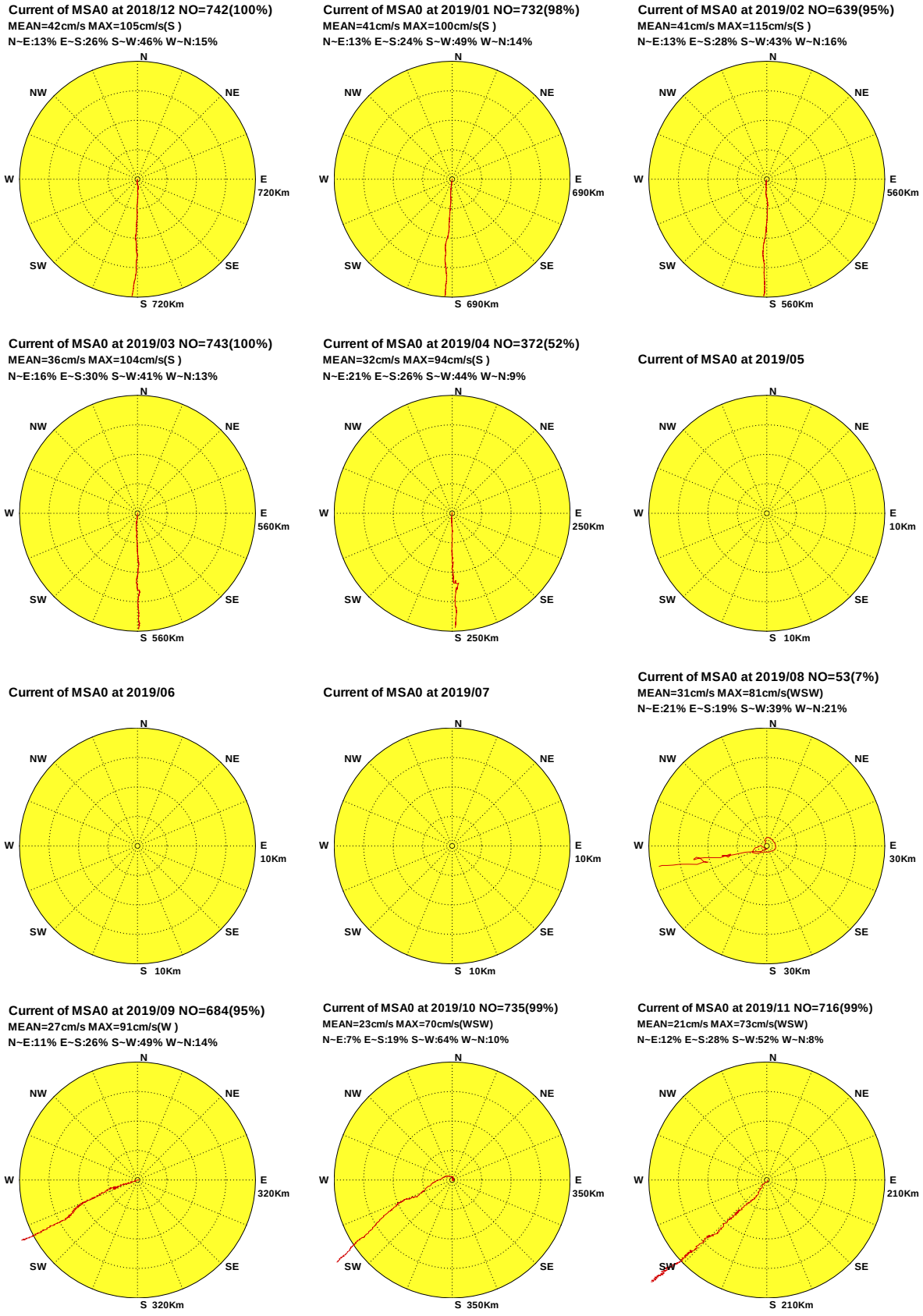


圖4.5.2a 2019年馬祖海域每月測站 A 觀測海流向量行進圖

C18CMSA0.1H0 C191MSA0.1H0 C192MSA0.1H0 C193MSA0.1H0 C194MSA0.1H0 C195MSA0.1H0
C196MSA0.1H0 C197MSA0.1H0 C198MSA0.1H0 C199MSA0.1H0 C19AMSA0.1H0 C19BMSA0.1H0

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Progressive Vector Diagram of Current

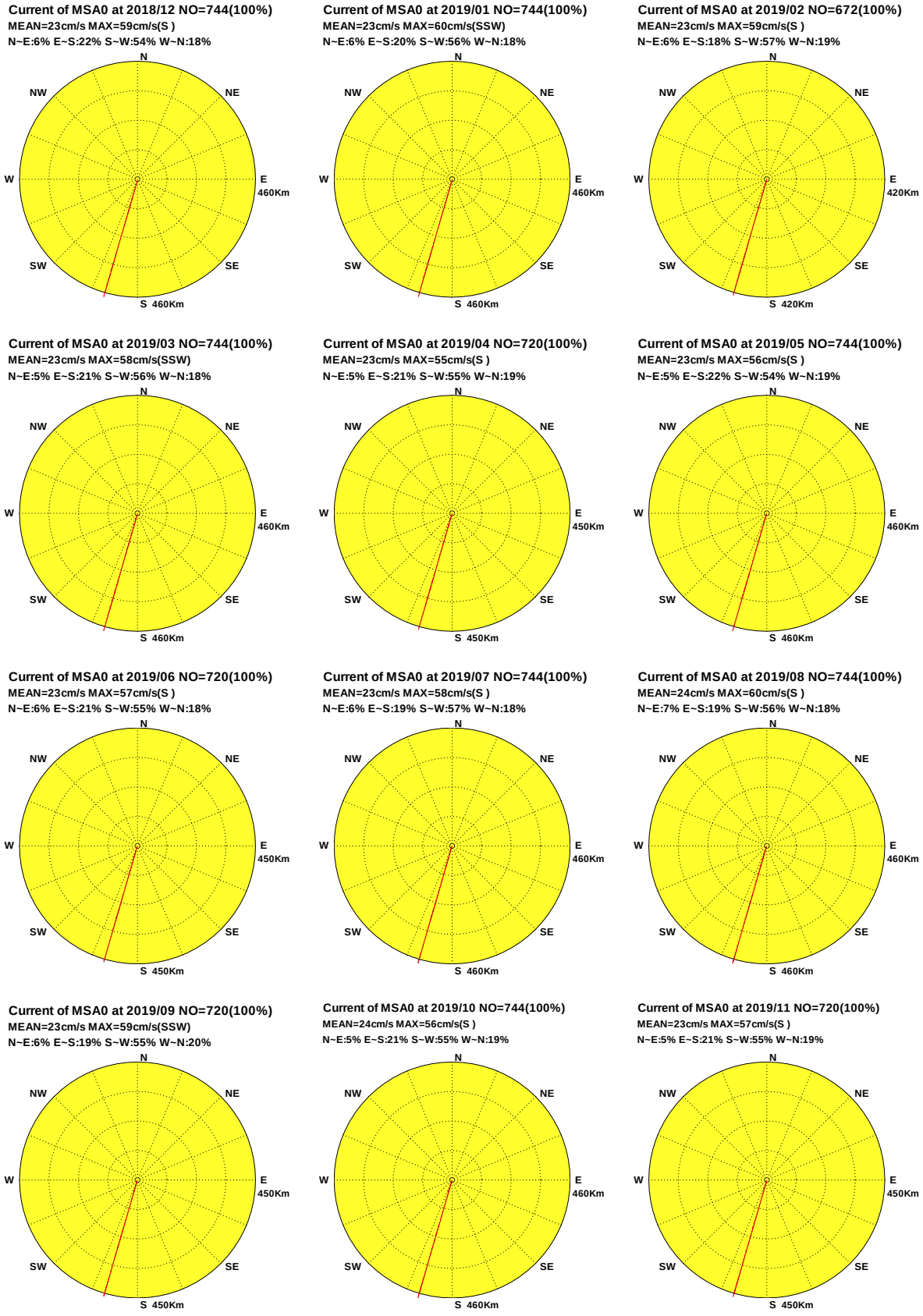


圖4.5.2b 2019年馬祖海域每月測站 A 計算潮流向量行進圖

C18CMSA0.1HD C191MSA0.1HD C192MSA0.1HD C193MSA0.1HD C194MSA0.1HD C195MSA0.1HD
C196MSA0.1HD C197MSA0.1HD C198MSA0.1HD C199MSA0.1HD C19AMSA0.1HD C19BMSA0.1HD

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Progressive Vector Diagram of Current

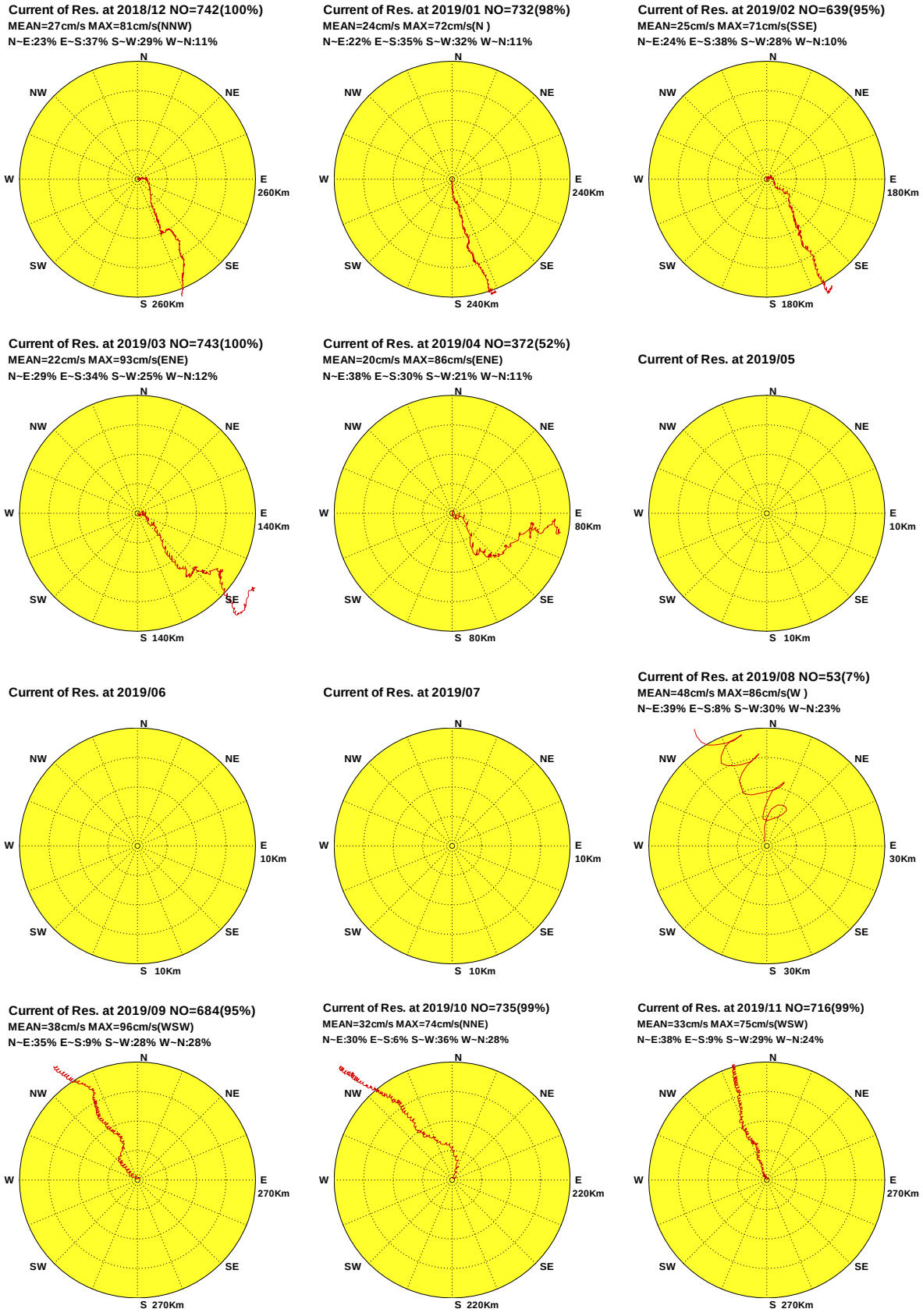


圖4.5.2c 2019年馬祖海域每月測站 A 計算殘流向量行進圖

Progressive Vector Diagram of Current

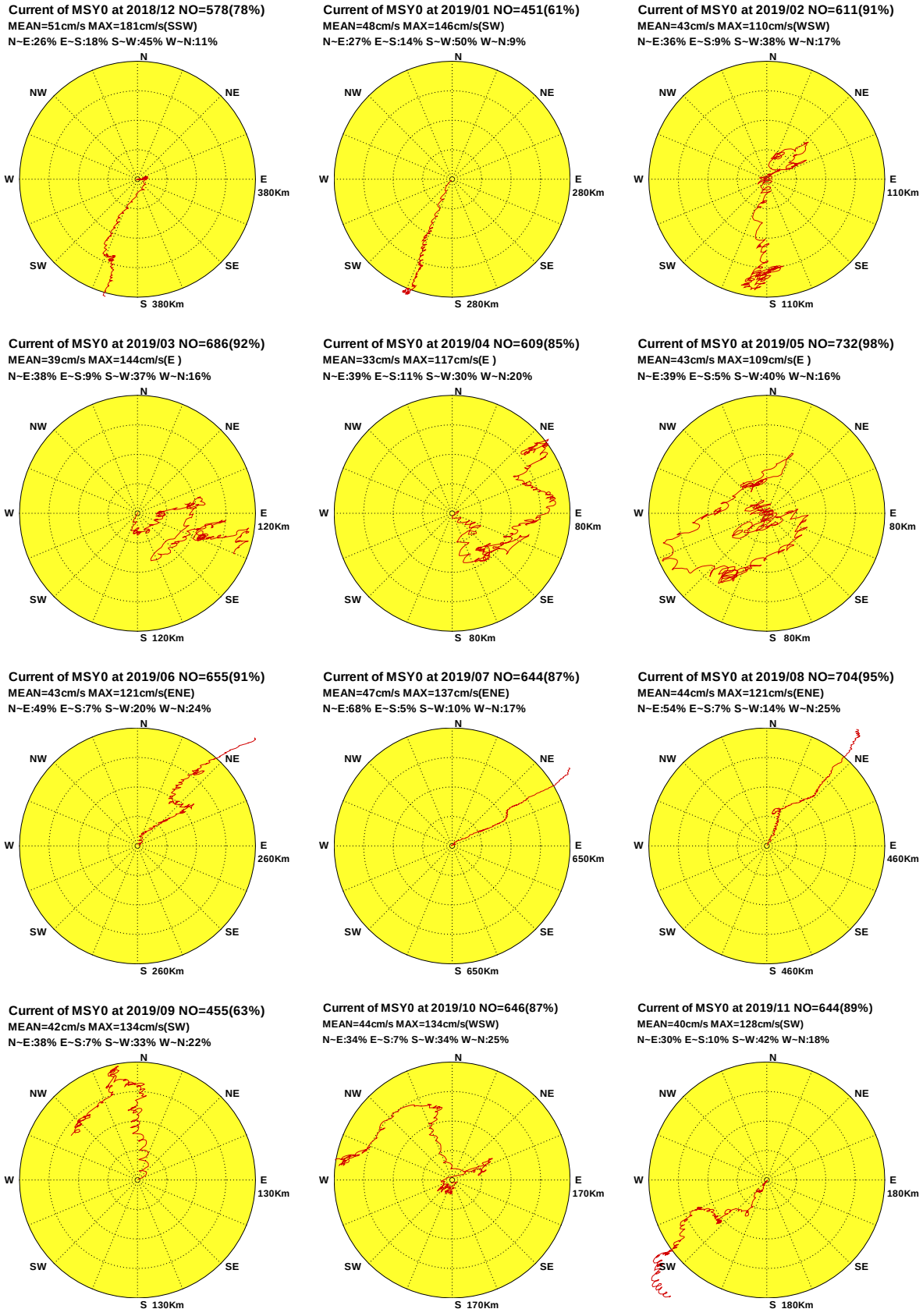


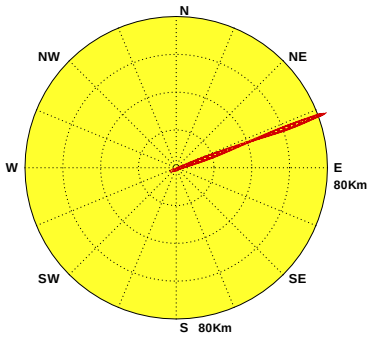
圖4.5.3a 2019年馬祖海域每月測站 Y 觀測海流向量行進圖

C18CMSY0.1H0 C191MSY0.1H0 C192MSY0.1H0 C193MSY0.1H0 C194MSY0.1H0 C195MSY0.1H0
C196MSY0.1H0 C197MSY0.1H0 C198MSY0.1H0 C199MSY0.1H0 C19AMSY0.1H0 C19BMSY0.1H0

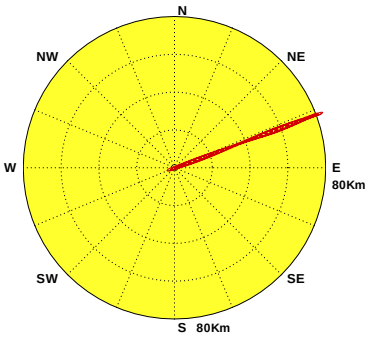
Institute of Harbor & Marine Technology

Progressive Vector Diagram of Current

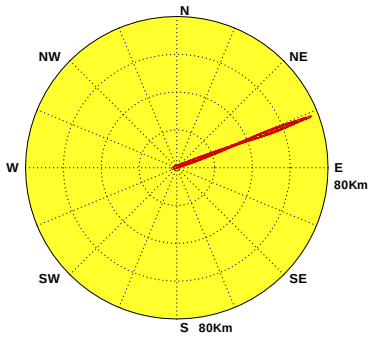
Current of MSY0 at 2018/12 NO=744(100%)
MEAN=27cm/s MAX=59cm/s(ENE)
N~E:41% E~S:12% S~W:36% W~N:11%



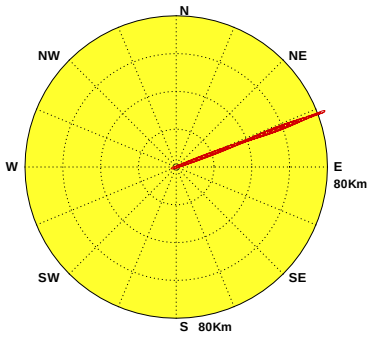
Current of MSY0 at 2019/01 NO=744(100%)
MEAN=27cm/s MAX=61cm/s(ENE)
N~E:41% E~S:12% S~W:36% W~N:11%



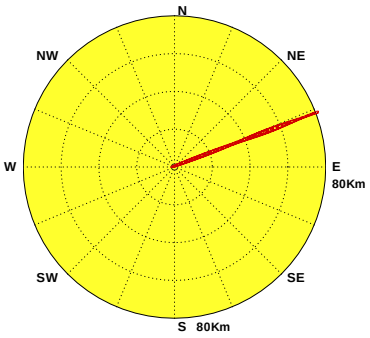
Current of MSY0 at 2019/02 NO=672(100%)
MEAN=27cm/s MAX=60cm/s(ENE)
N~E:41% E~S:12% S~W:36% W~N:11%



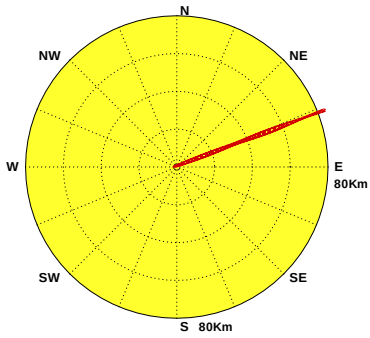
Current of MSY0 at 2019/03 NO=744(100%)
MEAN=26cm/s MAX=58cm/s(ENE)
N~E:41% E~S:11% S~W:36% W~N:12%



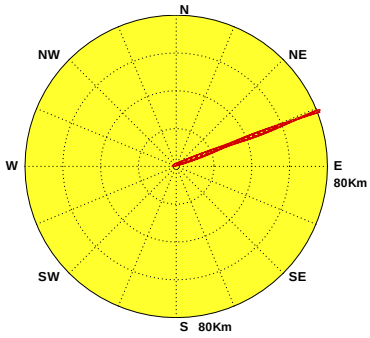
Current of MSY0 at 2019/04 NO=720(100%)
MEAN=26cm/s MAX=59cm/s(ENE)
N~E:40% E~S:12% S~W:36% W~N:12%



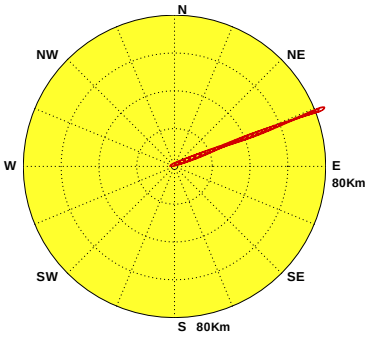
Current of MSY0 at 2019/05 NO=744(100%)
MEAN=26cm/s MAX=58cm/s(ENE)
N~E:42% E~S:11% S~W:36% W~N:11%



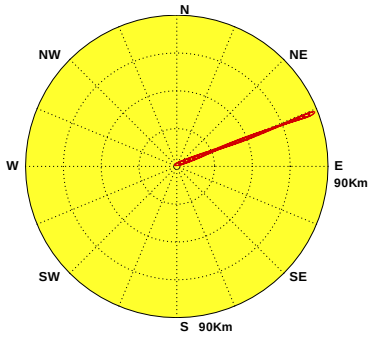
Current of MSY0 at 2019/06 NO=720(100%)
MEAN=26cm/s MAX=57cm/s(ENE)
N~E:42% E~S:11% S~W:36% W~N:11%



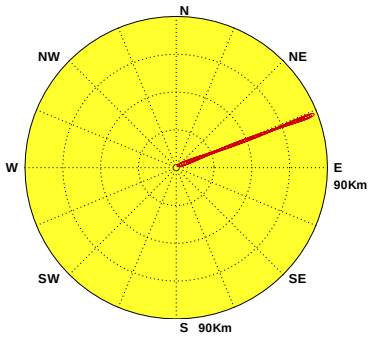
Current of MSY0 at 2019/07 NO=744(100%)
MEAN=27cm/s MAX=59cm/s(ENE)
N~E:41% E~S:12% S~W:35% W~N:12%



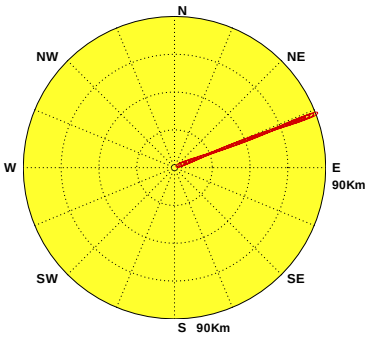
Current of MSY0 at 2019/08 NO=744(100%)
MEAN=27cm/s MAX=59cm/s(ENE)
N~E:40% E~S:12% S~W:36% W~N:12%



Current of MSY0 at 2019/09 NO=720(100%)
MEAN=27cm/s MAX=58cm/s(ENE)
N~E:40% E~S:13% S~W:36% W~N:11%



Current of MSY0 at 2019/10 NO=744(100%)
MEAN=27cm/s MAX=60cm/s(ENE)
N~E:40% E~S:12% S~W:36% W~N:12%



Current of MSY0 at 2019/11 NO=720(100%)
MEAN=27cm/s MAX=60cm/s(ENE)
N~E:40% E~S:13% S~W:35% W~N:12%

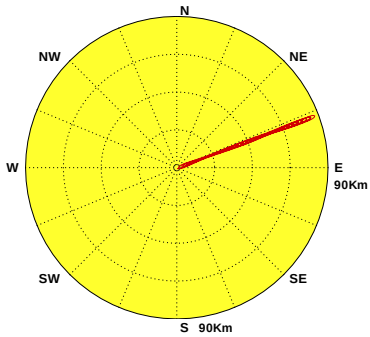


圖4.5.3b 2019年馬祖海域每月測站 Y 計算潮流向量行進圖

C18CMSY0.1HD C191MSY0.1HD C192MSY0.1HD C193MSY0.1HD C194MSY0.1HD C195MSY0.1HD
C196MSY0.1HD C197MSY0.1HD C198MSY0.1HD C199MSY0.1HD C19AMSY0.1HD C19BMSY0.1HD

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Progressive Vector Diagram of Current

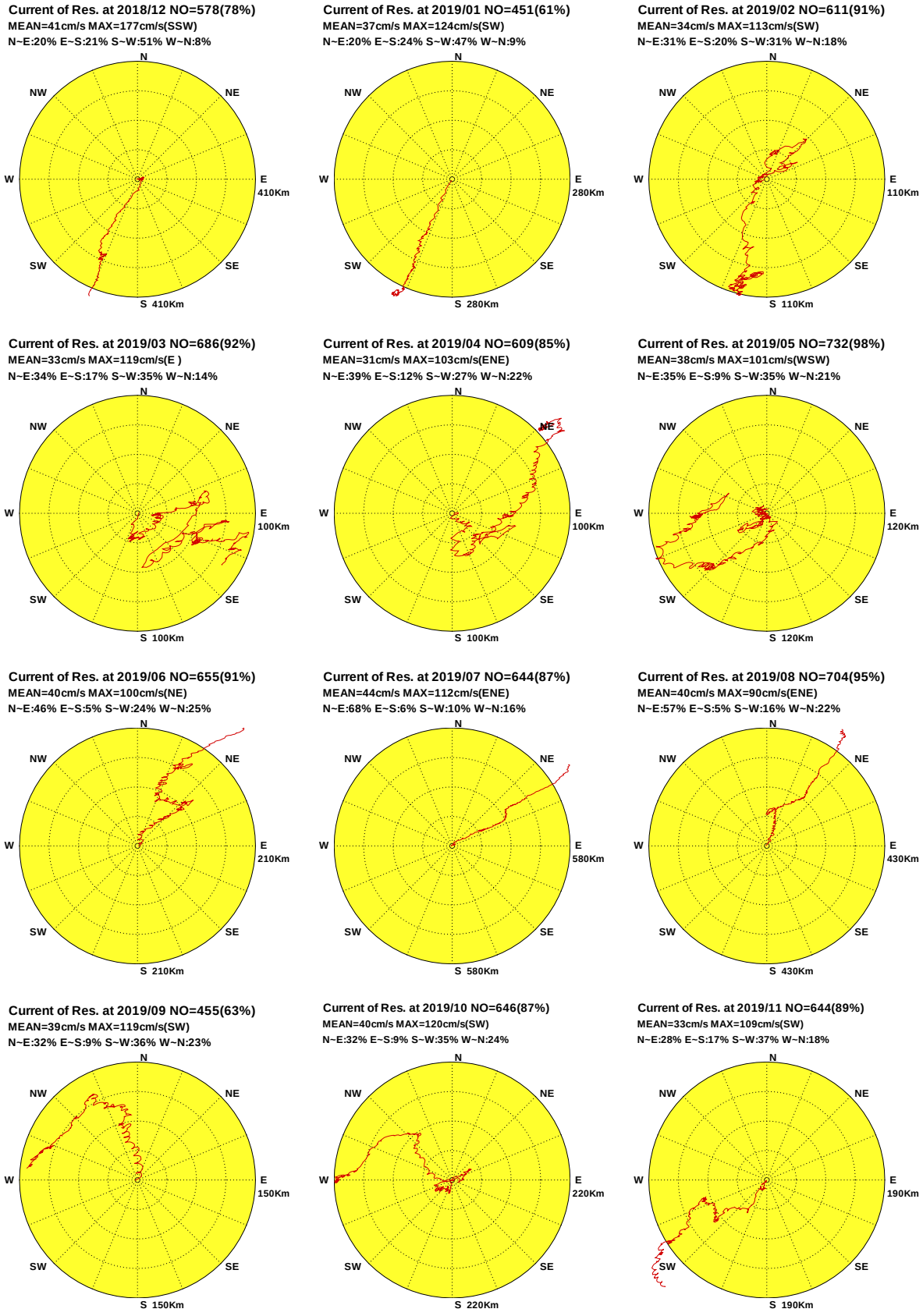


圖4.5.3c 2019年馬祖海域每月測站 Y 計算殘流向量行進圖

Progressive Vector Diagram of Current

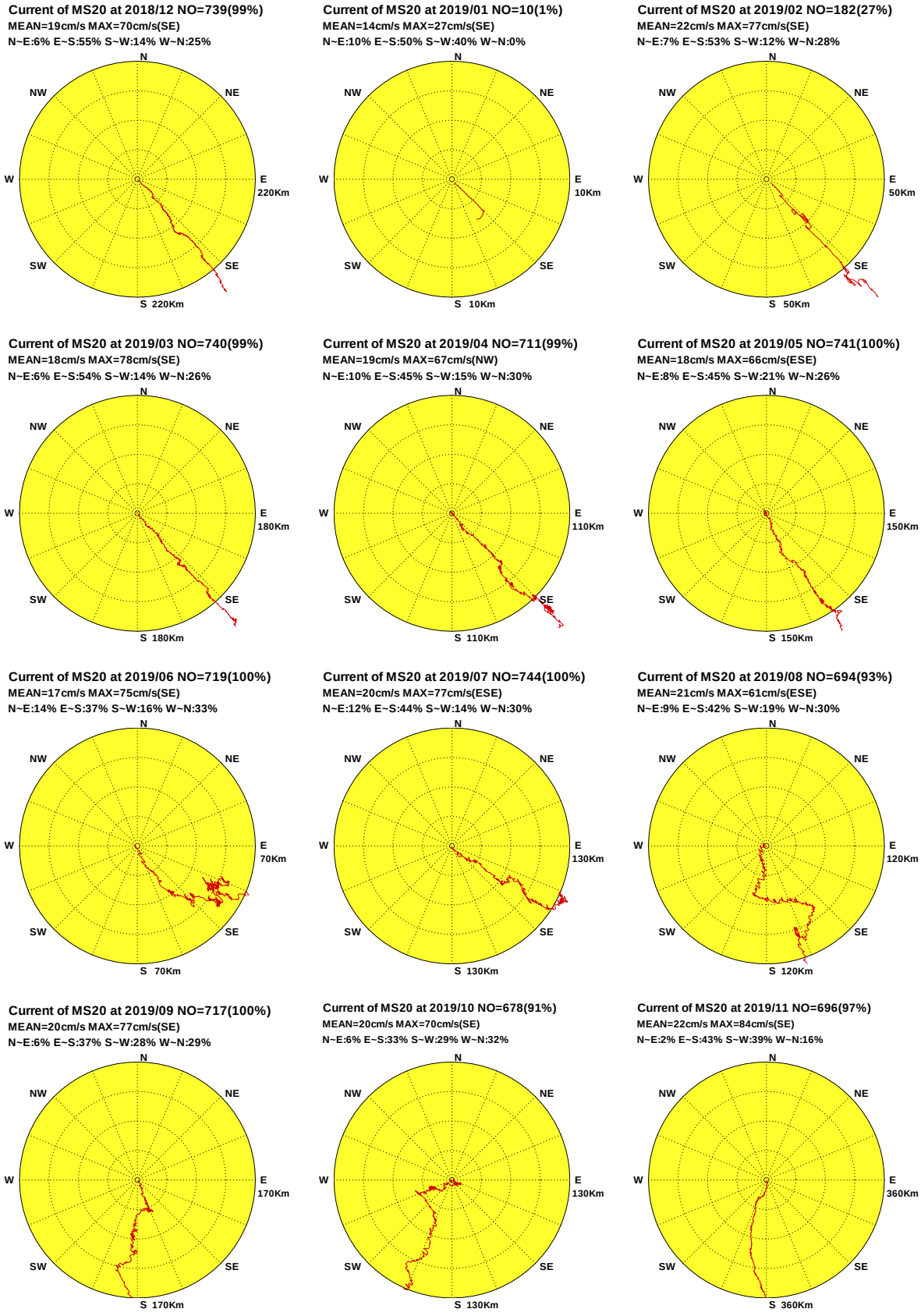


圖4.5.4a 2019年馬祖海域每月測站2觀測海流向量行進圖

C18CMS20.1H0 C191MS20.1H0 C192MS20.1H0 C193MS20.1H0 C194MS20.1H0 C195MS20.1H0
C196MS20.1H0 C197MS20.1H0 C198MS20.1H0 C199MS20.1H0 C19AMS20.1H0 C19BMS20.1H0

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Progressive Vector Diagram of Current

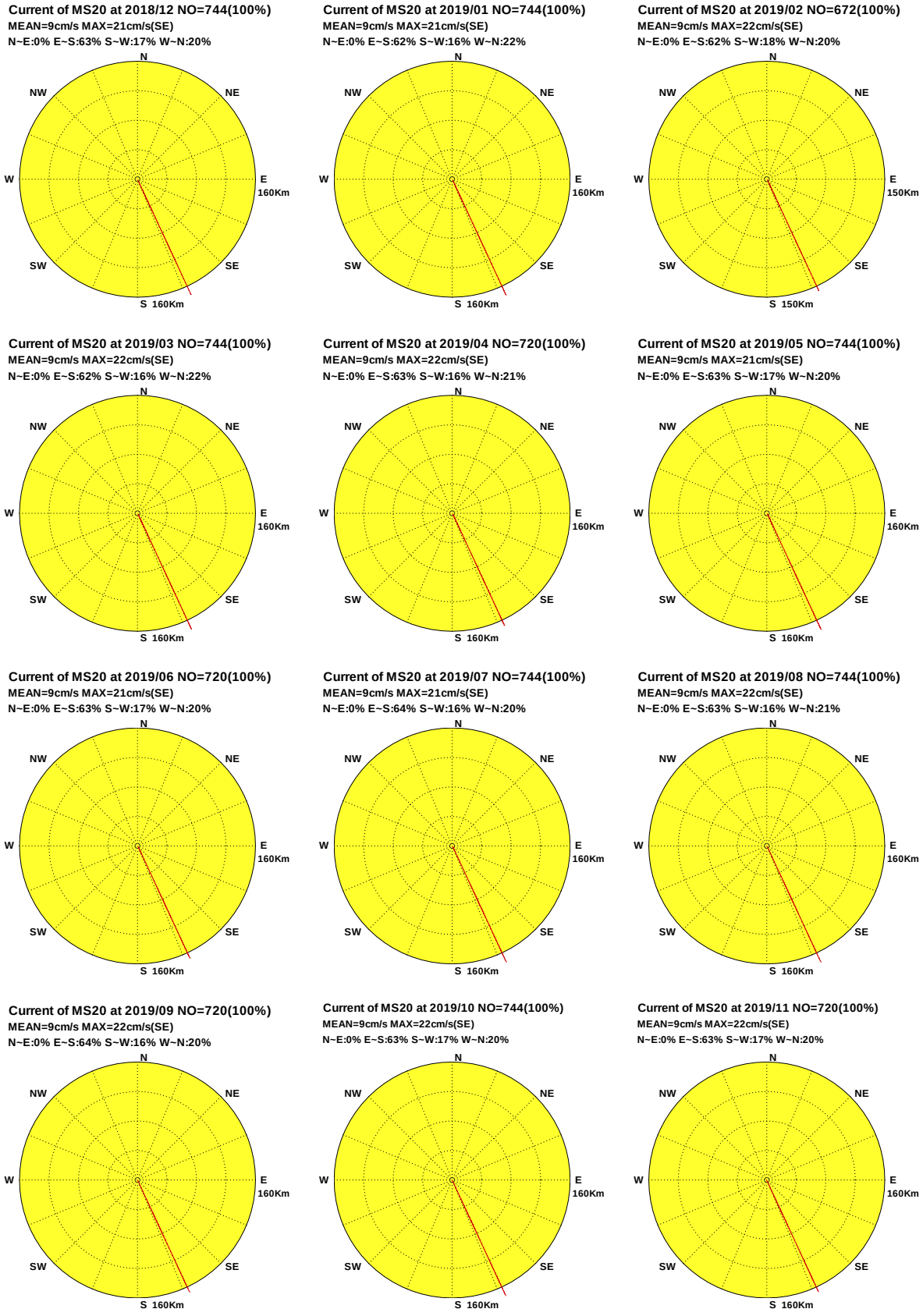


圖4.5.4b 2019年馬祖海域每月測站2計算潮流向量行進圖

Progressive Vector Diagram of Current

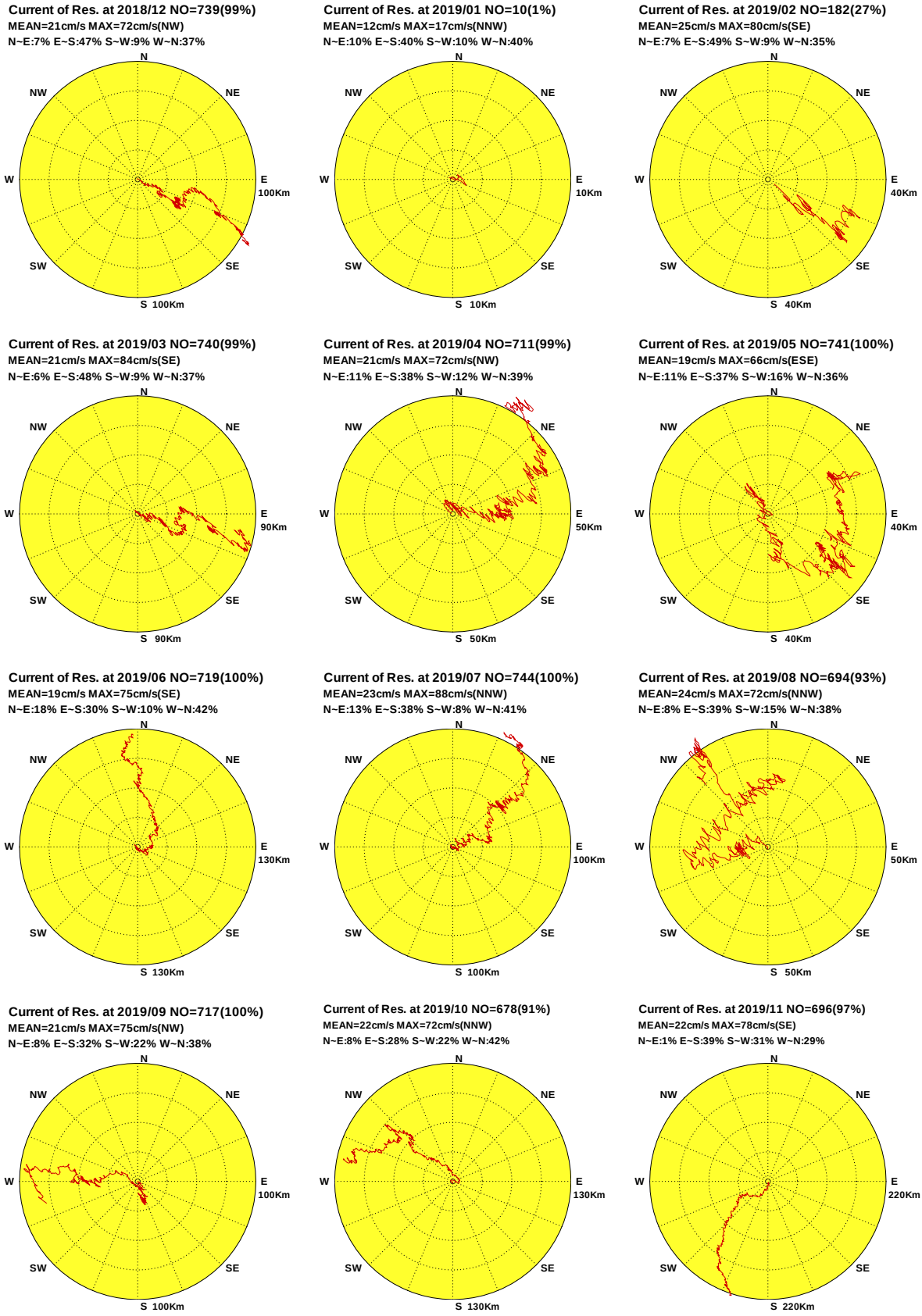


圖4.5.4c 2019年馬祖海域每月測站2計算殘流向量行進圖

Progressive Vector Diagram of Current

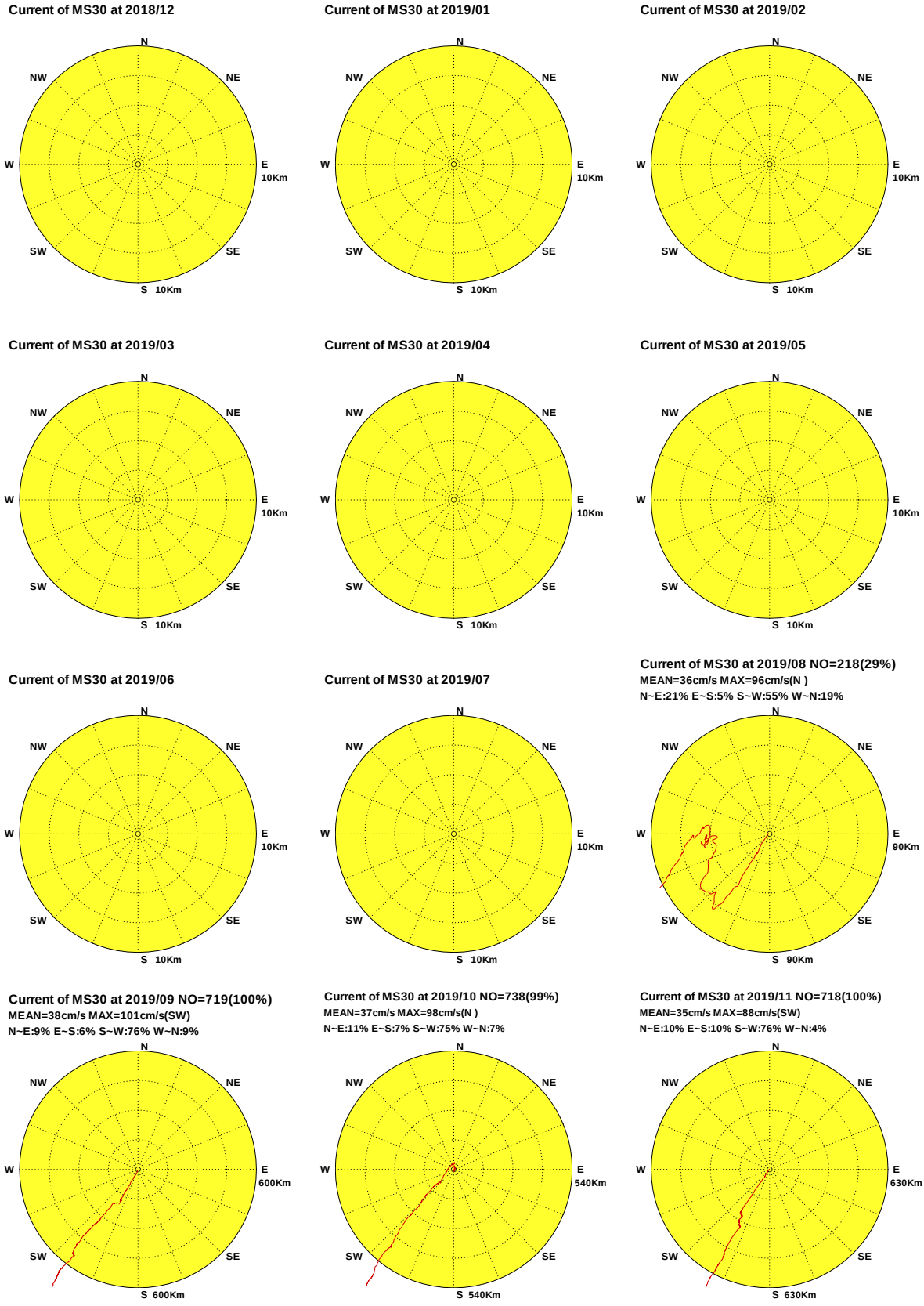


圖4.5.5a 2019年馬祖海域每月測站3觀測海流向量行進圖

C18CMS30.1H0 C191MS30.1H0 C192MS30.1H0 C193MS30.1H0 C194MS30.1H0 C195MS30.1H0
C196MS30.1H0 C197MS30.1H0 C198MS30.1H0 C199MS30.1H0 C19AMS30.1H0 C19BMS30.1H0

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Progressive Vector Diagram of Current

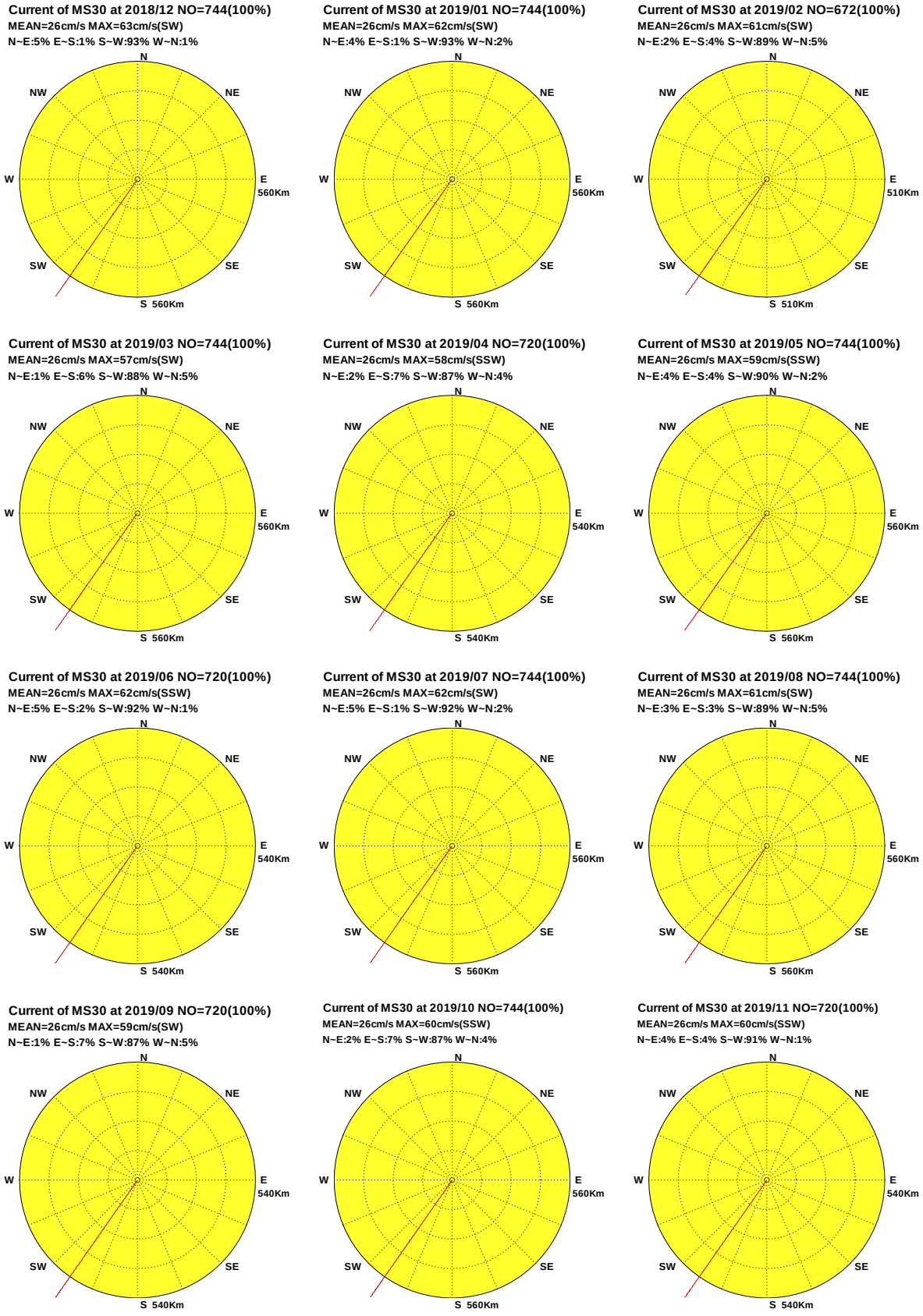


圖4.5.5b 2019年馬祖海域每月測站3計算潮流向量行進圖

Progressive Vector Diagram of Current

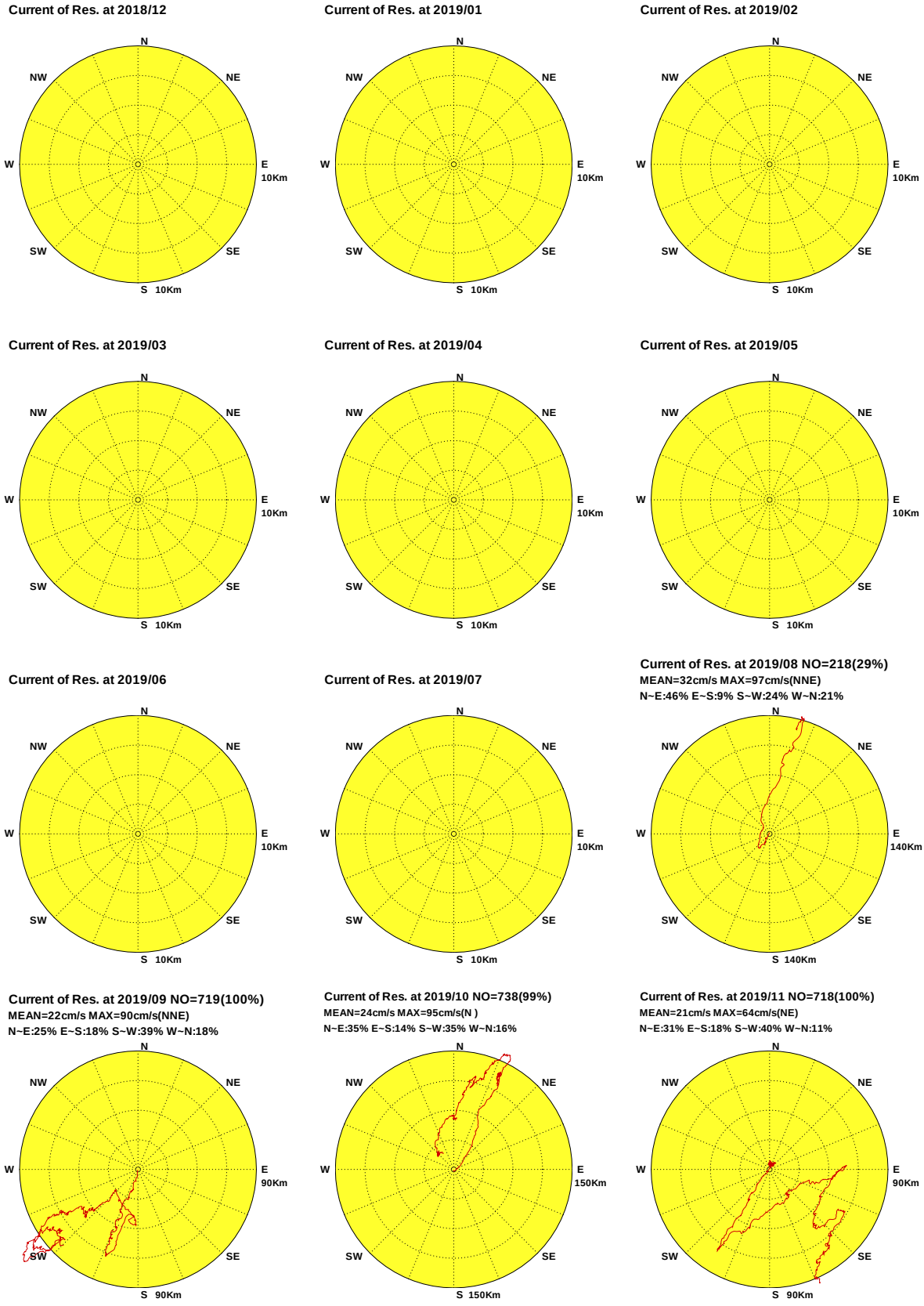


圖4.5.5c 2019年馬祖海域每月測站3計算殘流向量行進圖

C18CMS30.1HR C191MS30.1HR C192MS30.1HR C193MS30.1HR C194MS30.1HR C195MS30.1HR
C196MS30.1HR C197MS30.1HR C198MS30.1HR C199MS30.1HR C19AMS30.1HR C19BMS30.1HR

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Progressive Vector Diagram of Current

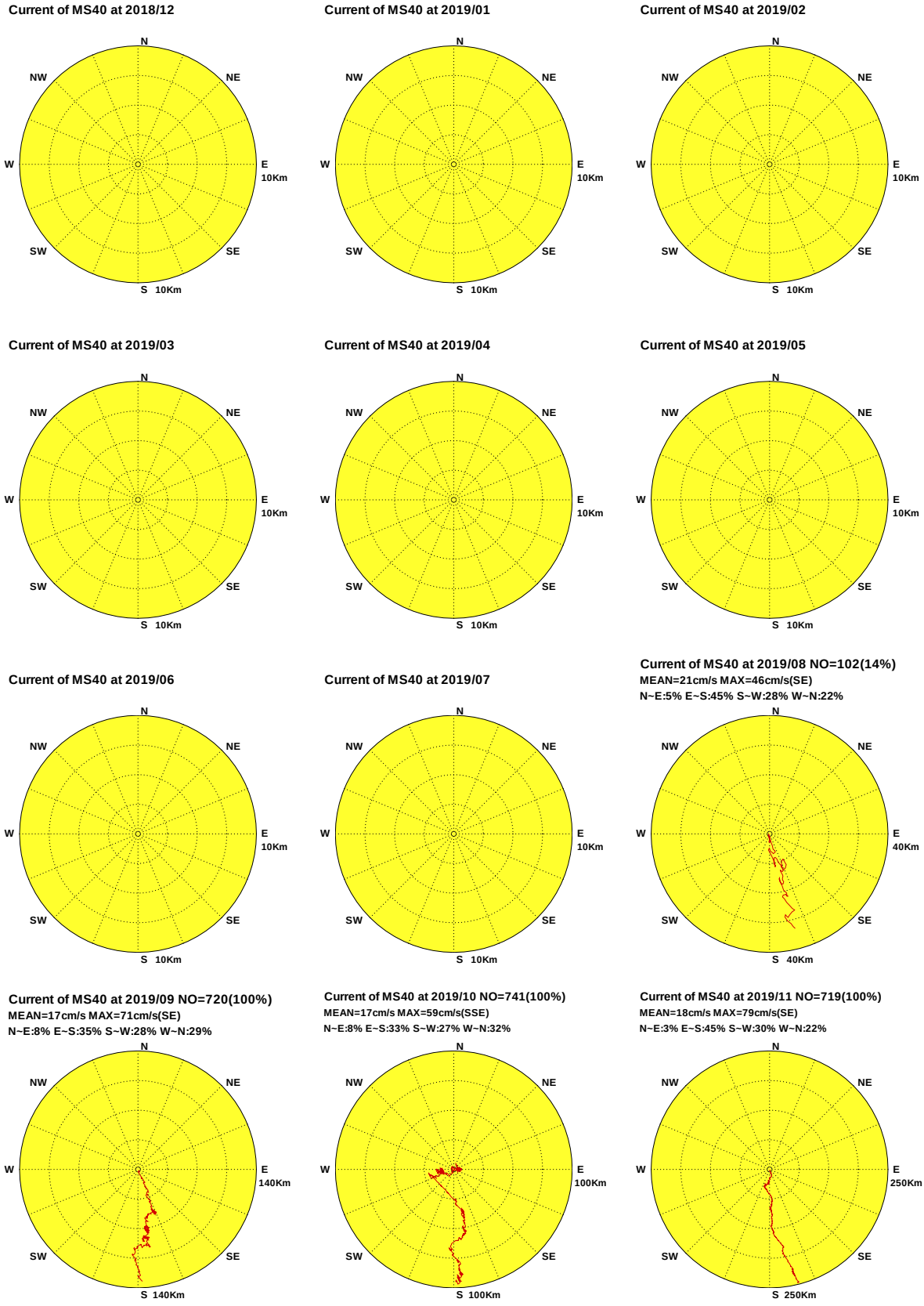


圖4.5.6a 2019年馬祖海域每月測站4觀測海流向量行進圖

C18CMS40.1H0 C191MS40.1H0 C192MS40.1H0 C193MS40.1H0 C194MS40.1H0 C195MS40.1H0
C196MS40.1H0 C197MS40.1H0 C198MS40.1H0 C199MS40.1H0 C19AMS40.1H0 C19BMS40.1H0

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Progressive Vector Diagram of Current

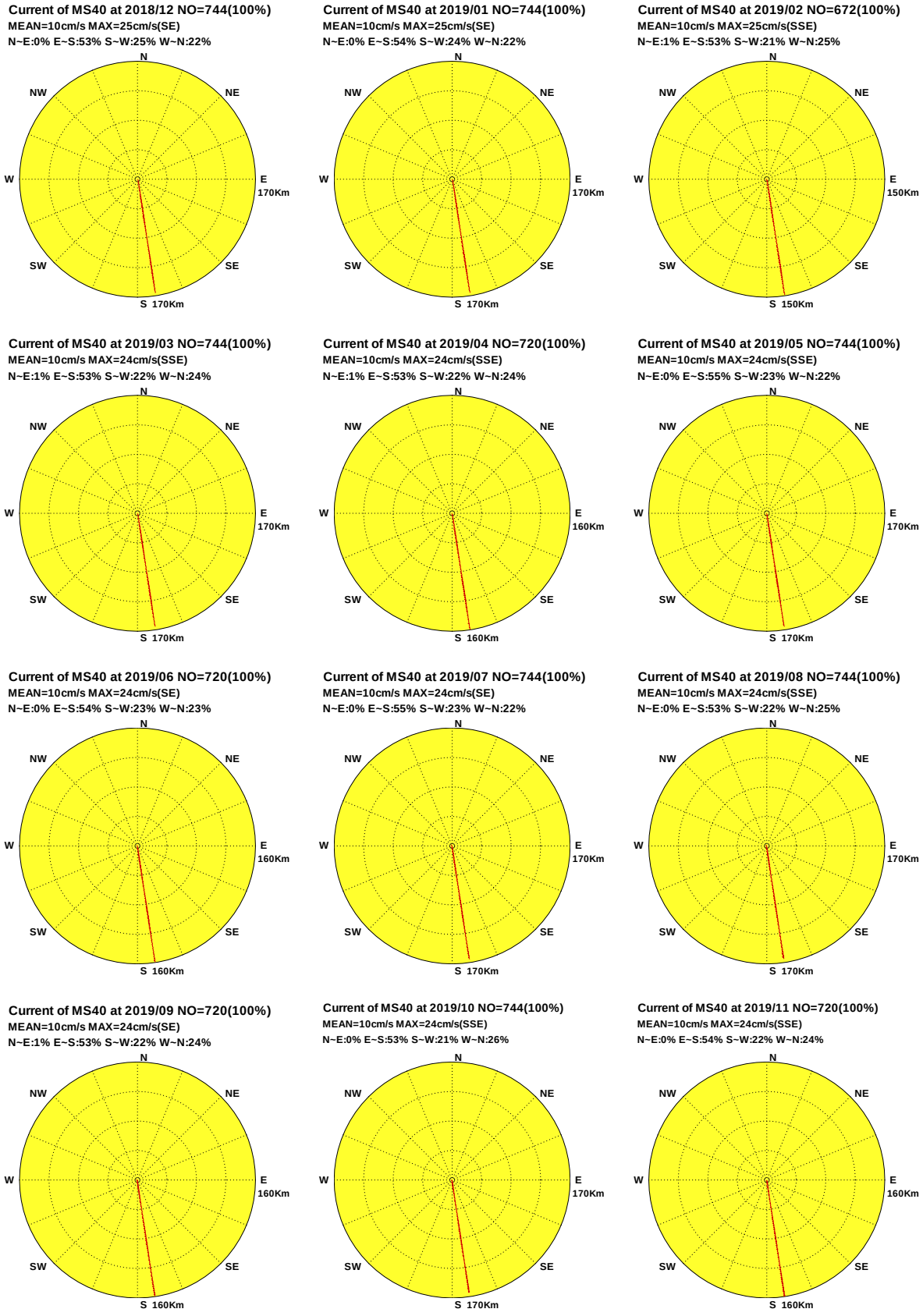


圖4.5.6b 2019年馬祖海域每月測站4計算潮流向量行進圖

Progressive Vector Diagram of Current

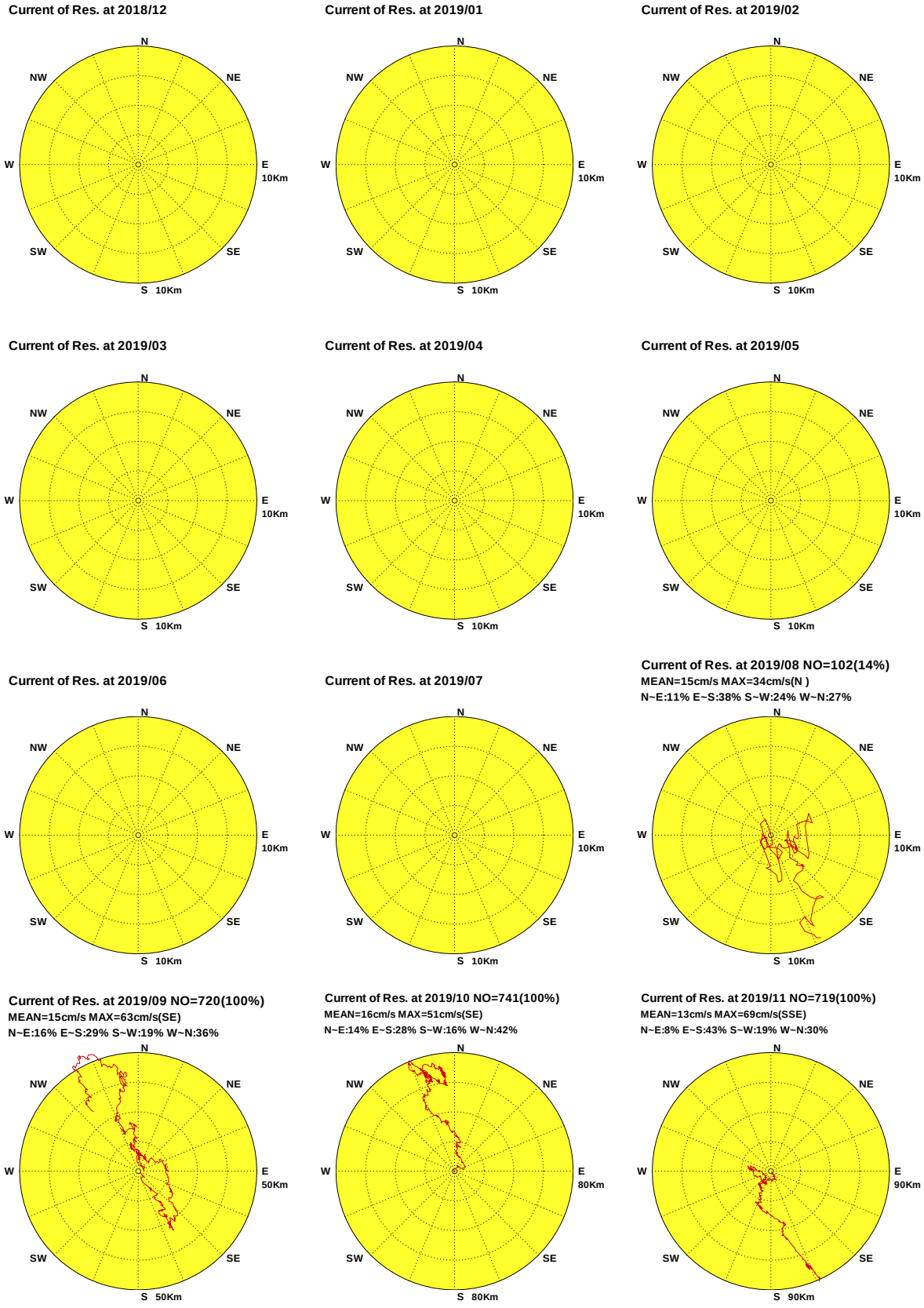


圖4.5.6c 2019年馬祖海域每月測站4計算殘流向量行進圖

C18CMS40.1HR C191MS40.1HR C192MS40.1HR C193MS40.1HR C194MS40.1HR C195MS40.1HR
C196MS40.1HR C197MS40.1HR C198MS40.1HR C199MS40.1HR C19AMS40.1HR C19BMS40.1HR

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