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太 陽 黑 子 觀 測 報 告
中 華 民 國 103 年

Report on Sunspot Observations
2014

臺北市立天文科學教育館

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太陽黑子觀測報告
臺北市立天文科學教育館
中華民國103年

觀測報告說明

本館蒐集之太陽黑子觀測資料始於民國36年7月，本冊為民國103年1月至12月的觀測結果。需要參考原始黑子投影資料或攝影影像者，可與我們聯繫。來信請寄：

111013臺北市士林區基河路363號

臺北市立天文科學教育館

tam001@g.tam.gov.tw

SUNSPOT OBSERVATIONS
Taipei Astronomical Museum
2014

Introduction

Sunspot observations have been carrying on by Taipei Astronomical Museum since July, 1947. This volume contains the observational results of sunspots at Taipei from Jan. to Dec., 2014. Copies of the projected or photographic solar images may be obtained by writing to:

111013 No.363, Jihe Rd., Shilin Dist., Taipei, Taiwan

Taipei Astronomical Museum

tam001@g.tam.gov.tw

觀測站地理位置

臺北市立天文科學教育館目前使用第二觀測室進行太陽黑子觀測，地理座標為：

緯度：北緯 $25^{\circ} 5' 44''$

經度：東經 $121^{\circ} 31' 5''$

高度：海拔 40 公尺

Location of Observatory

The geographic coordinates of the observatory in the Taipei Astronomical Museum are:

Geographic Latitude : $25^{\circ} 5' 44''$

Geographic Longitude : $121^{\circ} 31' 5''$

Elevation : 40 m

望遠鏡基本資料

觀測儀器使用日本五藤光學製造廠的20公分庫德式折射鏡，詳細資料如下表：

望遠鏡		五藤光學20公分庫德式折射鏡
物鏡	有效口徑	200 mm
	焦長	1800 mm
目鏡	焦長	K-28 mm
投影直徑		200 mm

由於庫德式望遠鏡在觀測時會有影像旋轉的效應，故測量到的黑子群日面經度及日面緯度會與真實的黑子位置有一點誤差。

Telescope

The equatorially mounted Coude's telescope manufactured by Goto Optical Mfg. Co. was used to observe the projected solar disk in this year. Data of this instrument are as the table below:

Telescope		GOTO 20cm Coude's refractor
Objective lens	Effective Aperture	200 mm
	Focal Length	1800 mm
Eyepieces	Focal Length	K-28 mm
Image Diameter		200 mm

Because of the rotation effect of Coude's telescope, the heliographic longitude and latitude of the sunspot groups will have some error relative to the true locations.

報表符號說明

U. T.	觀測時的世界標準時間
g	太陽黑子群數
f	太陽黑子總數
R	相對太陽黑子數
A	經過球面差修正的太陽黑子總面積，單位：太陽半球面積的百萬分之一
Q	太陽影像視相度：5，極佳；4，良好；3，普通；2，不佳；1，惡劣
N	太陽可見半球面的北半球
S	太陽可見半球面的南半球
C	太陽可見半球面的中央區域
W	整個太陽可見半球面
Group No.	美國國家海洋暨大氣總署（NOAA）編號
Bs	被觀測的黑子群在日面座標系中的緯度
Ls	被觀測的黑子群在日面座標系中的經度
n	黑子個數
T	黑子群分類（蘇黎世天文臺分類法）

Code Table

Symbols is explained as follows:

U.T.	Universal time of the observation.
g	Number of the observed groups of sunspots.
f	Total number of the sunspots.
R	Relative sunspot number.
A	The total areas of the sunspots corrected for the effect of surface foreshortening expressed in millionths of the solar hemisphere.
Q	Solar image quality in five grades: 5,excellent; 4,good; 3,fair; 2,poor; 1,very poor.
N	Northern half of the visible solar hemisphere.
S	Southern half of the visible solar hemisphere.
C	Central zone of the visible solar disk.
W	Full visible solar hemisphere.
Group No.	National Oceanic and Atmospheric Administration (NOAA) group number.
Bs	The heliographic latitude of the observed sunspot group.
Ls	The heliographic longitude of the observed sunspot group.
n	Number of the observed sunspots.
T	Group type in Zurich classification.

月平均值

由於太陽的自轉週期比一個月略短些，因此由太陽自轉和黑子在日面經度分佈上的不均勻所造成的變動和影響，可以經由許多個月的資料綜合而將之排除。使用平滑月平均相對值就可以達到確實消除的目的。對平均相對數為 R_0 的任意一個月($n=0$)，其後各月的平均相對數依序為 $R_1, R_2, R_3, \dots, R_n, \dots$ ，則當月的平滑月平均相對值可由下式求得：

$$\overline{R}_0 = \frac{R_{-6} + R_{+6} + 2 \sum_{-5}^{+5} R_n}{24}$$

Monthly Mooth Date

As the synodic rotation period is only slightly shorter than one month, the fluctuations caused by the solar rotation and the unequal distribution of the spots in heliographic longitude are eliminated to a large extent by forming monthly means. In the aim of eliminating the real fluctuations too, further smoothing is achieved by the so-called smoothed monthly mean values. For a specific month ($n=0$) the monthly mean is R_0 , and the following months are $R_1, R_2, R_3, \dots, R_n, \dots$. The smoothed relative number for the month $n=0$ is calculated according to the following definition:

$$\overline{R}_0 = \frac{R_{-6} + R_{+6} + 2 \sum_{-5}^{+5} R_n}{24}$$

Location Lat. : 25.10° N
 Long. : 121.52° E
 Telescope : 20cm Refractor f=9.0
 Magnification : 64 Projection

太陽黑子觀測月報
 MONTHLY SUNSPOT DATA
 Jan. 2014

Taipei Astronomical Museum
 111013, Shilin Dist.
 Taipei, Taiwan

日期 Date	觀測時間 Obs. Time (U.T.)	全日面 Whole		中心區 Central Circle		北半球 N.Hemisphere		南半球 S.Hemisphere		相對數 Relative Number (10g+f)				面積 Area (in millionth hemisphere)		A. B. 型 Small Type Groups	視相 Seeing (1-5)	備考 Remark
		g	f	g	f	g	f	g	f	W	C	N	S	N	S			
1	05:55	7	35	2	17	1	1	6	34	105	37	11	94	22	368	1	4	
2																		Cloud
3	03:04	9	55	2	9	2	6	7	49	145	29	26	119	61	1369	1	3	
4																		Cloud
5	07:28	5	45	2	5	2	6	3	39	95	25	26	69	101	1621	1	2	
6																		None
7	06:55	8	81	4	77	4	24	4	57	161	117	64	97	211	928	1	4	
8																		Cloud
9																		Rain
10																		Cloud
11	02:44	6	33	2	2	3	15	3	18	93	22	45	48	296	1074	0	4	
12																		Cloud
13																		Rain
14																		Rain
15	07:55	6	17	2	11	3	5	3	12	77	31	35	42	98	179	2	2	
16	08:10	6	17	1	2	2	4	4	13	77	12	24	53	55	171	0	3	
17																		None
18																		Cloud
19	06:45	8	16	0	0	2	8	6	8	96	0	28	68	80	778	1	3	
20	02:20	9	32	3	12	1	10	8	22	122	42	20	102	26	489	0	3	
21																		Cloud
22	06:25	10	48	3	25	1	18	9	30	148	55	28	120	45	403	1	3	
23	07:30	10	31	6	22	1	11	9	20	131	82	21	110	112	478	2	2	
24	08:18	6	24	3	12	1	10	5	14	84	42	20	64	72	138	0	3	
25	03:21	5	17	2	8	1	4	4	13	67	28	14	53	17	304	1	4	
26																		Cloud
27	04:53	7	18	3	6	0	0	7	18	88	36	0	88	0	250	3	3	
28	02:48	5	20	1	3	1	3	4	17	70	13	13	57	130	368	1	4	
29																		None
30																		None
31	02:34	2	27	0	0	1	7	1	20	47	0	17	30	109	818	0	2	
Mean No.		6.81	32.25	2.25	13.19	1.63	8.25	5.19	24.00	100.38	35.69	24.50	75.88	89.68	608.63	Obs. Days: 16		

Location Lat. : 25.10° N
 Long. : 121.52° E
 Telescope : 20cm Refractor f=9.0
 Magnification : 64 Projection

太陽黑子觀測月報
 MONTHLY SUNSPOT DATA
 Feb. 2014

Taipei Astronomical Museum
 111013, Shilin Dist.
 Taipei, Taiwan

日期 Date	觀測時間 Obs. Time (U.T.)	全日面 Whole		中心區 Central Circle		北半球 N.Hemisphere		南半球 S.Hemisphere		相對數 Relative Number (10g+f)				面積 Area (in millionth hemisphere)		A. B. 型 群數 Small Type Groups	視相 Seeing (1-5)	備考 Remark
		g	f	g	f	g	f	g	f	W	C	N	S	N	S			
		1	09:29	2	26	1	17	1	9	1	17	46	27	19	27			
2																		Cloud
3																		None
4																		Cloud
5																		Rain
6																		Rain
7																		Rain
8																		Rain
9																		Rain
10																		Rain
11																		Rain
12																		Rain
13																		Rain
14																		Rain
15																		Cloud
16																		Cloud
17																		Cloud
18																		Cloud
19																		Rain
20	06:45	6	42	0	0	1	1	5	41	102	0	11	91	4	413	1	3	
21	06:15	7	43	2	19	2	4	5	39	113	39	24	89	51	641	3	3	
22																		Cloud
23																		None
24	03:01	6	53	4	46	2	5	4	48	113	86	25	88	71	718	1	3	
25	02:50	7	94	3	76	3	46	4	48	164	106	76	88	230	468	1	3	
26																		Cloud
27																		Cloud
28																		None
Mean No.		5.60	51.60	2.00	31.60	1.80	13.00	3.80	38.60	107.60	51.60	31.00	76.60	96.36	573.70	Obs. Days: 5		

Location Lat. : 25.10° N
 Long. : 121.52° E
 Telescope : 20cm Refractor f=9.0
 Magnification : 64 Projection

太陽黑子觀測月報
 MONTHLY SUNSPOT DATA
 Mar. 2014

Taipei Astronomical Museum
 111013, Shilin Dist.
 Taipei, Taiwan

日期 Date	觀測時間 Obs. Time (U.T.)	全日面 Whole		中心區 Central Circle		北半球 N.Hemisphere		南半球 S.Hemisphere		相對數 Relative Number (10g+f)				面積 Area (in millionth hemisphere)		A. B. 型 群數 Small Type Groups	視相 Seeing (1-5)	備考 Remark
		g	f	g	f	g	f	g	f	W	C	N	S	N	S			
1																		Cloud
2																		Cloud
3																		Cloud
4																		Rain
5																		Rain
6																		Rain
7																		Cloud
8																		Cloud
9																		Cloud
10																		Cloud
11																		Cloud
12																		Rain
13																		Rain
14	02:00	8	43	1	23	4	15	4	28	123	33	55	68	514	435	1	3	
15																		None
16																		Cloud
17	06:30	6	35	3	12	3	11	3	24	95	42	41	54	320	261	2	3	
18	02:55	5	24	2	11	1	3	4	21	74	31	13	61	46	92	2	3	
19																		Cloud
20																		Cloud
21																		Cloud
22																		Cloud
23	02:45	8	43	3	21	3	7	5	36	123	51	37	86	166	329	1	4	
24	02:10	6	29	3	24	3	4	3	25	89	54	34	55	184	244	0	3	
25	06:20	5	57	2	36	1	14	4	43	107	56	24	83	75	232	0	2	
26	02:35	5	76	3	54	2	24	3	52	126	84	44	82	71	145	0	4	
27																		None
28	06:45	7	45	3	28	3	26	4	19	115	58	56	59	59	115	1	3	
29																		Rain
30																		Cloud
31																		Rain
Mean No.		6.25	44.00	2.50	26.13	2.50	13.00	3.75	31.00	106.50	51.13	38.00	68.50	179.57	231.63	Obs. Days: 8		

Location Lat. : 25.10° N
 Long. : 121.52° E
 Telescope : 20cm Refractor f=9.0
 Magnification : 64 Projection

太陽黑子觀測月報
 MONTHLY SUNSPOT DATA
 Apr. 2014

Taipei Astronomical Museum
 111013, Shilin Dist.
 Taipei, Taiwan

日期 Date	觀測時間 Obs. Time (U.T.)	全日面 Whole		中心區 Central Circle		北半球 N.Hemisphere		南半球 S.Hemisphere		相對數 Relative Number (10g+f)				面積 Area (in millionth hemisphere)		A. B. 型 群數 Small Type Groups	視相 Seeing (1-5)	備考 Remark
		g	f	g	f	g	f	g	f	W	C	N	S	N	S			
		1																
2																		Cloud
3																		Cloud
4																		Cloud
5																		None
6	02:19	6	20	5	13	3	5	3	15	80	63	35	45	173	175	1	3	
7																		Rain
8	08:03	7	19	1	5	6	13	1	6	89	15	73	16	152	25	1	3	
9																		Cloud
10	02:54	5	11	0	0	4	7	1	4	61	0	47	14	115	7	0	3	
11	02:45	4	16	0	0	4	16	0	0	56	0	56	0	353	0	0	3	
12																		Cloud
13	02:12	4	7	2	2	3	4	1	3	47	22	34	13	259	42	0	4	
14																		None
15	07:00	9	63	5	33	5	22	4	41	153	83	72	81	151	378	2	4	
16	06:27	11	108	6	91	6	34	5	74	218	151	94	124	126	530	3	3	
17	06:50	11	93	6	80	6	32	5	61	203	140	92	111	861	785	3	3	
18	02:45	10	69	4	42	6	23	4	46	169	82	83	86	1385	968	2	2	
19																		Cloud
20																		Rain
21	01:36	8	34	2	9	2	6	6	28	114	29	26	88	783	1341	0	4	
22																		Cloud
23																		Cloud
24																		Rain
25	07:10	5	12	2	8	1	2	4	10	62	28	12	50	132	1814	0	3	
26																		Cloud
27																		Cloud
28	02:24	5	13	0	0	2	6	3	7	63	0	26	37	56	339	0	2	
29																		None
30																		Cloud
Mean No.		7.08	38.75	2.75	23.58	4.00	14.17	3.08	24.58	109.58	51.08	54.17	55.42	378.85	533.64	Obs. Days: 12		

Location Lat. : 25.10° N
 Long. : 121.52° E
 Telescope : 20cm Refractor f=9.0
 Magnification : 64 Projection

太陽黑子觀測月報
 MONTHLY SUNSPOT DATA
 May 2014

Taipei Astronomical Museum
 111013, Shilin Dist.
 Taipei, Taiwan

日期 Date	觀測時間 Obs. Time (U.T.)	全日面 Whole		中心區 Central Circle		北半球 N.Hemisphere		南半球 S.Hemisphere		相對數 Relative Number (10g+f)				面積 Area (in millionth hemisphere)		A. B. 型 群數 Small Type Groups	視相 Seeing (1-5)	備考 Remark
		g	f	g	f	g	f	g	f	W	C	N	S	N	S			
		1																
2	07:07	6	62	4	59	1	1	5	61	122	99	11	111	211	1049	1	3	
3																		Cloud
4																		Rain
5																		Rain
6																		Rain
7																		Rain
8																		Cloud
9																		Rain
10																		None
11	02:22	8	20	5	11	5	10	3	10	100	61	60	40	491	57	2	4	
12																		Rain
13																		Cloud
14	02:05	8	58	3	41	5	26	3	32	138	71	76	62	327	199	1	3	
15																		Rain
16																		Rain
17																		Cloud
18																		Rain
19																		Rain
20																		Rain
21																		Rain
22																		Rain
23																		Rain
24	02:29	4	18	1	7	0	0	4	18	58	17	0	58	0	113	1	2	
25																		Cloud
26																		None
27																		Cloud
28																		Cloud
29	07:43	4	18	3	17	0	0	4	18	58	47	0	58	0	40	1	4	
30																		Cloud
31	02:33	4	8	1	4	0	0	4	8	48	14	0	48	0	961	1	2	
Mean No.		5.67	30.67	2.83	23.17	1.83	6.17	3.83	24.50	87.33	51.50	24.50	62.83	171.46	403.18	Obs. Days: 6		

Location Lat. : 25.10° N
 Long. : 121.52° E
 Telescope : 20cm Refractor f=9.0
 Magnification : 64 Projection

太陽黑子觀測月報
 MONTHLY SUNSPOT DATA
 Jun. 2014

Taipei Astronomical Museum
 111013, Shilin Dist.
 Taipei, Taiwan

日期 Date	觀測時間 Obs. Time (U.T.)	全日面 Whole		中心區 Central Circle		北半球 N.Hemisphere		南半球 S.Hemisphere		相對數 Relative Number (10g+f)				面積 Area (in millionth hemisphere)		A. B. 型 群數 Small Type Groups	視相 Seeing (1-5)	備考 Remark
		g	f	g	f	g	f	g	f	W	C	N	S	N	S			
1	07:28	4	14	0	0	0	0	4	14	54	0	0	54	0	124	1	3	
2																		None
3																		Cloud
4	07:35	4	15	2	11	1	1	3	14	55	31	11	44	25	127	2	3	
5																		Rain
6																		Rain
7																		Rain
8																		Rain
9																		Cloud
10																		Cloud
11																		Rain
12	03:45	10	82	2	17	4	29	6	53	182	37	69	113	640	1184	0	3	
13	03:05	10	81	2	13	4	22	6	59	181	33	62	119	518	1348	0	3	
14																		Cloud
15																		Rain
16																		Rain
17																		None
18	02:48	5	20	2	4	2	7	3	13	70	24	27	43	185	125	1	2	
19																		Cloud
20																		Rain
21																		Rain
22																		Rain
23																		Rain
24																		Rain
25	01:40	4	11	1	6	2	4	2	7	51	16	24	27	189	39	1	3	
26																		None
27	03:52	5	12	3	10	3	6	2	6	62	40	36	26	90	78	1	3	
28	01:53	5	11	3	6	3	8	2	3	61	36	38	23	124	22	2	3	
29																		Rain
30	06:19	8	38	4	23	5	21	3	17	118	63	71	47	132	832	2	3	
Mean No.		6.11	31.56	2.11	10.00	2.67	10.89	3.44	20.67	92.67	31.11	37.56	55.11	211.38	430.96	Obs. Days: 9		

Location Lat. : 25.10° N
 Long. : 121.52° E
 Telescope : 20cm Refractor f=9.0
 Magnification : 64 Projection

太陽黑子觀測月報
 MONTHLY SUNSPOT DATA
 Jul. 2014

Taipei Astronomical Museum
 111013, Shilin Dist.
 Taipei, Taiwan

日期 Date	觀測時間 Obs. Time (U.T.)	全日面 Whole		中心區 Central Circle		北半球 N.Hemisphere		南半球 S.Hemisphere		相對數 Relative Number (10g+f)				面積 Area (in millionth hemisphere)		A. B. 型 群數 Small Type Groups	視相 Seeing (1-5)	備考 Remark
		g	f	g	f	g	f	g	f	W	C	N	S	N	S			
		1																
2	02:30	7	57	2	30	4	37	3	20	127	50	77	50	219	982	0	3	
3	02:20	7	48	3	27	3	23	4	25	118	57	53	65	318	1353	0	2	
4	02:10	9	74	4	45	4	28	5	46	164	85	68	96	644	1671	1	3	
5	02:25	9	62	5	38	4	17	5	45	152	88	57	95	248	1559	1	3	
6	07:39	9	49	6	22	3	6	6	43	139	82	36	103	174	1680	1	3	
7																		None
8																		Rain
9																		None
10																		Cloud
11																		Cloud
12	02:48	6	42	2	8	3	15	3	27	102	28	45	57	114	1248	0	2	
13	02:15	6	33	3	22	3	12	3	21	93	52	42	51	93	1236	0	4	
14																		Cloud
15	03:32	1	3	0	0	1	3	0	0	13	0	13	0	39	0	1	2	
16																		None
17																		None
18																		None
19																		None
20																		None
21																		None
22																		Rain
23																		Rain
24	02:35	4	9	0	0	1	3	3	6	49	0	13	36	117	104	0	2	
25																		Cloud
26	06:25	5	11	2	8	1	6	4	5	61	28	16	45	136	95	2	3	
27																		None
28	06:15	7	28	3	24	1	8	6	20	98	54	18	80	279	1014	1	3	
29	02:50	8	36	3	26	1	6	7	30	116	56	16	100	100	917	1	3	
30	02:33	8	39	1	4	1	4	7	35	119	14	14	105	130	744	1	4	
31																		Rain
Mean No.		6.62	37.77	2.62	19.54	2.31	12.92	4.31	24.85	103.92	45.69	36.00	67.92	200.83	969.27	Obs. Days: 13		

Location Lat. : 25.10° N
 Long. : 121.52° E
 Telescope : 20cm Refractor f=9.0
 Magnification : 64 Projection

太陽黑子觀測月報
 MONTHLY SUNSPOT DATA
 Aug. 2014

Taipei Astronomical Museum
 111013, Shilin Dist.
 Taipei, Taiwan

日期 Date	觀測時間 Obs. Time (U.T.)	全日面 Whole		中心區 Central Circle		北半球 N.Hemisphere		南半球 S.Hemisphere		相對數 Relative Number (10g+f)				面積 Area (in millionth hemisphere)		A. B. 型 群數 Small Type Groups	視相 Seeing (1-5)	備考 Remark
		g	f	g	f	g	f	g	f	W	C	N	S	N	S			
1	07:45	8	47	2	9	1	3	7	44	127	29	13	114	37	739	0	3	
2																		Cloud
3																		None
4																		None
5																		Cloud
6	02:50	5	53	2	35	1	9	4	44	103	55	19	84	175	302	0	3	
7	08:50	6	65	1	27	2	31	4	34	125	37	51	74	350	502	0	4	
8	02:10	5	37	1	18	2	25	3	12	87	28	45	42	347	286	2	3	
9																		Cloud
10																		None
11																		Rain
12																		Rain
13																		Rain
14	03:32	3	16	0	0	2	15	1	1	46	0	35	11	346	35	1	2	
15																		None
16																		Cloud
17																		None
18	02:00	6	36	3	32	3	30	3	6	96	62	60	36	466	2828	0	2	
19																		Cloud
20																		Cloud
21																		None
22																		None
23																		None
24																		None
25																		None
26	03:00	5	35	2	23	3	32	2	3	85	43	62	23	922	667	0	3	
27																		None
28	08:57	5	6	3	3	3	4	2	2	56	33	34	22	456	207	1	4	
29	02:00	6	25	3	15	2	14	4	11	85	45	34	51	536	1740	2	3	
30																		Cloud
31																		None
Mean No.		5.44	35.56	1.89	18.00	2.11	18.11	3.33	17.44	90.00	36.89	39.22	50.78	403.79	811.66	Obs. Days: 9		

Location Lat. : 25.10° N
 Long. : 121.52° E
 Telescope : 20cm Refractor f=9.0
 Magnification : 64 Projection

太陽黑子觀測月報
 MONTHLY SUNSPOT DATA
 Sep. 2014

Taipei Astronomical Museum
 111013, Shilin Dist.
 Taipei, Taiwan

日期 Date	觀測時間 Obs. Time (U.T.)	全日面 Whole		中心區 Central Circle		北半球 N.Hemisphere		南半球 S.Hemisphere		相對數 Relative Number (10g+f)				面積 Area (in millionth hemisphere)		A. B. 型 群數 Small Type Groups	視相 Seeing (1-5)	備考 Remark
		g	f	g	f	g	f	g	f	W	C	N	S	N	S			
		1																
2	02:44	5	23	1	13	1	2	4	21	73	23	12	61	1895	490	0	2	
3	07:11	5	35	1	22	0	0	5	35	85	32	0	85	0	632	0	3	
4																		None
5	02:51	8	34	2	8	3	4	5	30	114	28	34	80	338	3554	1	3	
6																		None
7																		None
8	06:27	8	44	1	1	2	10	6	34	124	11	30	94	454	960	0	4	
9																		Cloud
10																		Cloud
11	02:20	8	75	3	62	2	24	6	51	155	92	44	111	475	535	2	3	
12																		Cloud
13																		None
14	06:53	5	20	2	8	2	8	3	12	70	28	28	42	127	176	0	2	
15																		None
16	02:23	5	15	2	7	2	8	3	7	65	27	28	37	195	147	1	2	
17	07:32	5	13	1	6	3	8	2	5	63	16	38	25	108	100	1	2	
18	07:47	4	13	1	6	3	9	1	4	53	16	39	14	68	84	0	3	
19	02:30	6	16	1	4	3	7	3	9	76	14	37	39	86	277	0	3	
20																		None
21																		Rain
22																		Rain
23																		Rain
24																		Cloud
25																		Cloud
26	02:45	6	98	4	93	2	34	4	64	158	133	54	104	253	664	1	4	
27	02:25	6	60	4	55	2	16	4	44	120	95	36	84	444	892	1	2	
28																		None
29																		None
30	02:05	9	70	2	28	3	37	6	33	160	48	67	93	614	645	1	3	
Mean No.		6.15	39.69	1.92	24.08	2.15	12.85	4.00	26.85	101.23	43.31	34.38	66.85	389.08	704.30	Obs. Days: 13		

Location Lat. : 25.10° N
 Long. : 121.52° E
 Telescope : 20cm Refractor f=9.0
 Magnification : 64 Projection

太陽黑子觀測月報
 MONTHLY SUNSPOT DATA
 Oct. 2014

Taipei Astronomical Museum
 111013, Shilin Dist.
 Taipei, Taiwan

日期 Date	觀測時間 Obs. Time (U.T.)	全日面 Whole		中心區 Central Circle		北半球 N.Hemisphere		南半球 S.Hemisphere		相對數 Relative Number (10g+f)				面積 Area (in millionth hemisphere)		A. B. 型 群數 Small Type Groups	視相 Seeing (1-5)	備考 Remark
		g	f	g	f	g	f	g	f	W	C	N	S	N	S			
1																		Cloud
2																		None
3																		Cloud
4																		Cloud
5																		Cloud
6																		Cloud
7																		Cloud
8	03:06	6	14	0	0	0	0	6	14	74	0	0	74	0	380	2	3	
9																		Rain
10																		Rain
11																		Rain
12																		Cloud
13																		None
14																		None
15	03:17	6	20	2	11	3	12	3	8	80	31	42	38	47	239	4	3	
16	07:33	2	2	1	1	0	0	2	2	22	11	0	22	0	270	0	4	
17	07:42	3	8	1	1	0	0	3	8	38	11	0	38	0	520	0	2	
18	07:47	4	14	2	4	0	0	4	14	54	24	0	54	0	1530	1	4	
19	07:45	5	32	3	12	1	7	4	25	82	42	17	65	33	677	1	3	
20	03:30	3	18	1	5	3	18	0	0	48	15	48	0	605	0	0	4	
21	07:20	4	45	1	5	1	5	3	40	85	15	15	70	60	1032	0	3	
22																		Rain
23																		Cloud
24	02:20	7	60	1	45	2	9	5	51	130	55	29	101	151	3010	1	3	
25																		Cloud
26	01:50	6	75	1	4	2	11	4	64	135	14	31	104	147	2175	1	4	
27	01:10	5	50	2	3	1	1	4	49	100	23	11	89	45	1958	0	3	
28	02:35	5	27	3	6	1	4	4	23	77	36	14	63	103	3243	0	3	
29																		None
30																		None
31	05:50	7	16	3	9	2	5	5	11	86	39	25	61	108	162	2	4	
Mean No.		4.85	29.31	1.62	8.15	1.23	5.54	3.62	23.77	77.77	24.31	17.85	59.92	100.07	1168.89	Obs. Days: 13		

Location Lat. : 25.10° N
 Long. : 121.52° E
 Telescope : 20cm Refractor f=9.0
 Magnification : 64 Projection

太陽黑子觀測月報
 MONTHLY SUNSPOT DATA
 Nov. 2014

Taipei Astronomical Museum
 111013, Shilin Dist.
 Taipei, Taiwan

日期 Date	觀測時間 Obs. Time (U.T.)	全日面 Whole		中心區 Central Circle		北半球 N.Hemisphere		南半球 S.Hemisphere		相對數 Relative Number (10g+f)				面積 Area (in millionth hemisphere)		A. B. 型 群數 Small Type Groups	視相 Seeing (1-5)	備考 Remark
		g	f	g	f	g	f	g	f	W	C	N	S	N	S			
		1	07:47	6	16	2	11	4	13	2	3	76	31	53	23			
2																		Cloud
3																		None
4																		Cloud
5	02:19	8	28	3	16	4	11	4	17	108	46	51	57	516	133	4	4	
6	03:05	6	38	2	16	4	23	2	15	98	36	63	35	551	69	3	4	
7	02:27	5	27	1	2	3	20	2	7	77	12	50	27	594	48	1	3	
8																		Cloud
9																		Rain
10																		None
11	07:49	4	45	1	27	2	28	2	17	85	37	48	37	187	126	0	3	
12																		Rain
13																		Rain
14																		Cloud
15																		Rain
16																		Rain
17																		Rain
18																		Cloud
19																		Cloud
20	03:07	2	16	1	14	0	0	2	16	36	24	0	36	0	1390	0	3	
21																		None
22	02:17	2	27	1	16	0	0	2	27	47	26	0	47	0	1485	0	4	
23	02:34	4	34	1	2	1	2	3	32	74	12	12	62	7	1769	1	4	
24	01:50	4	43	0	0	1	1	3	42	83	0	11	72	317	1620	0	4	
25	07:50	5	35	2	21	2	9	3	26	85	41	29	56	176	1441	1	3	
26																		Cloud
27																		None
28																		None
29																		None
30																		None
Mean No.		4.60	30.90	1.40	12.50	2.10	10.70	2.50	20.20	76.90	26.50	31.70	45.20	254.24	818.37	Obs. Days: 10		

Location Lat. : 25.10° N
 Long. : 121.52° E
 Telescope : 20cm Refractor f=9.0
 Magnification : 64 Projection

太陽黑子觀測月報
 MONTHLY SUNSPOT DATA
 Dec. 2014

Taipei Astronomical Museum
 111013, Shilin Dist.
 Taipei, Taiwan

日期 Date	觀測時間 Obs. Time (U.T.)	全日面 Whole		中心區 Central Circle		北半球 N.Hemisphere		南半球 S.Hemisphere		相對數 Relative Number (10g+f)				面積 Area (in millionth hemisphere)		A. B. 型 群數 Small Type Groups	視相 Seeing (1-5)	備考 Remark
		g	f	g	f	g	f	g	f	W	C	N	S	N	S			
1																		Cloud
2																		Cloud
3																		Cloud
4																		Rain
5	07:25	5	18	0	0	1	1	4	17	68	0	11	57	172	936	1	3	
6																		None
7																		None
8																		Rain
9																		Cloud
10																		Cloud
11																		Cloud
12																		Rain
13																		Cloud
14																		Cloud
15	02:52	10	46	4	16	5	17	5	29	146	56	67	79	253	661	1	2	
16																		Cloud
17																		Cloud
18																		Cloud
19																		Rain
20																		Cloud
21																		Rain
22	07:58	6	20	1	3	3	3	3	17	80	13	33	47	246	857	0	1	
23																		Cloud
24	02:31	7	22	1	12	2	4	5	18	92	22	24	68	79	798	0	2	
25																		Rain
26																		Cloud
27																		Rain
28																		Rain
29																		None
30																		None
31																		None
Mean No.		7.00	26.50	1.50	7.75	2.75	6.25	4.25	20.25	96.50	22.75	33.75	62.75	187.19	813.17		Obs. Days: 4	

太陽黑子群發展表
DEVELOPMENT TABLE OF SUNSPOT-GROUPS

Observatory : Taipei Astronomical Museum

Lat. : 25.10° N Long. : 121.52° E

Group No.	Date	Obs. Time (U.T.)	Bs (°)	Ls (°)	n	A (msh)	T	Q
1936	1-Jan	05:55	-14.4	226.8	7	177	E	4
	3-Jan	03:04	-17.0	231.3	8	339	E	3
1937	1-Jan	05:55	-13.9	205.7	7	35	B	4
	3-Jan	03:04	-14.4	190.8	2	8	D	3
	5-Jan	07:28	-11.7	188.0	7	116	D	2
	7-Jan	06:55	-10.1	171.8	1	15	D	4
1938	1-Jan	05:55	-11.0	176.6	10	49	J	4
	3-Jan	03:04	-14.9	180.1	5	63	C	3
	7-Jan	06:55	-14.6	179.3	1	13	J	4
1940	1-Jan	05:55	-7.4	232.9	3	54	D	4
	3-Jan	03:04	-9.8	236.3	7	238	D	3
1941	1-Jan	05:55	-17.6	215.4	6	30	D	4
	3-Jan	03:04	-14.2	207.2	5	46	D	3
1942	1-Jan	05:55	9.7	126.9	1	22	J	4
	3-Jan	03:04	7.4	127.6	2	22	C	3
	5-Jan	07:28	10.0	128.8	1	19	J	2
	7-Jan	06:55	11.2	130.3	3	13	C	4
1943	1-Jan	05:55	-11.7	121.6	1	24	C	4
	3-Jan	03:04	-12.1	121.1	3	19	C	3
	5-Jan	07:28	-11.3	118.6	4	22	J	2
	7-Jan	06:55	-14.4	112.6	5	12	A	4
1944	3-Jan	03:04	-10.9	97.8	19	657	F	3
	5-Jan	07:28	-7.3	98.7	28	1482	F	2
	7-Jan	06:55	-12.5	95.2	50	888	F	4
	11-Jan	02:44	-9.2	98.7	16	871	E	4
1945	3-Jan	03:04	9.4	146.1	4	40	B	3
1946	5-Jan	07:28	9.1	100.6	5	82	B	2
	7-Jan	06:55	11.2	99.7	19	141	D	4

太陽黑子群發展表
DEVELOPMENT TABLE OF SUNSPOT-GROUPS

Observatory : Taipei Astronomical Museum

Lat. : 25.10° N Long. : 121.52° E

Group No.	Date	Obs. Time (U.T.)	Bs (°)	Ls (°)	n	A (msh)	T	Q
	11-Jan	02:44	6.9	97.8	9	172	D	4
1947	7-Jan	06:55	10.9	175.6	1	28	C	4
1948	7-Jan	06:55	6.1	43.6	1	29	J	4
	11-Jan	02:44	6.5	43.2	1	94	J	4
	15-Jan	07:55	3.6	43.8	1	59	J	2
	16-Jan	08:10	6.3	45.9	2	43	J	3
1949	11-Jan	02:44	-16.6	14.0	1	187	J	4
	15-Jan	07:55	-16.6	10.4	3	82	J	2
	16-Jan	08:10	-15.1	8.1	2	65	J	3
	19-Jan	06:45	-14.2	6.4	2	67	J	3
	20-Jan	02:20	-15.6	8.4	2	92	J	3
1950	11-Jan	02:44	14.9	26.1	5	30	C	4
	15-Jan	07:55	14.9	29.9	2	27	B	2
	16-Jan	08:10	17.4	26.6	2	12	C	3
1951	11-Jan	02:44	-15.8	43.9	1	16	C	4
1952	15-Jan	07:55	-30.8	329.9	1	32	C	2
	16-Jan	08:10	-33.7	322.3	4	30	E	3
	19-Jan	06:45	-32.8	328.4	1	47	J	3
	20-Jan	02:20	-33.3	326.4	1	15	J	3
	22-Jan	06:25	-33.6	324.8	1	38	J	3
	23-Jan	07:30	-31.5	322.6	1	16	J	2
1953	15-Jan	07:55	-17.4	28.0	8	65	D	2
	16-Jan	08:10	-20.1	31.2	5	50	D	3
1954	15-Jan	07:55	18.2	20.7	2	13	B	2
	19-Jan	06:45	12.6	0.5	1	19	A	3
1955	16-Jan	08:10	-10.7	282.6	2	26	J	3
	19-Jan	06:45	-13.8	276.8	1	53	J	3
	20-Jan	02:20	-13.6	279.4	1	44	J	3

太陽黑子群發展表
DEVELOPMENT TABLE OF SUNSPOT-GROUPS

Observatory : Taipei Astronomical Museum

Lat. : 25.10° N Long. : 121.52° E

Group No.	Date	Obs. Time (U.T.)	Bs (°)	Ls (°)	n	A (msh)	T	Q
	22-Jan	06:25	-14.9	276.4	5	41	J	3
	23-Jan	07:30	-13.6	275.5	2	17	C	2
	24-Jan	08:18	-14.3	275.9	1	17	C	3
	25-Jan	03:21	-14.9	277.3	2	11	C	4
	27-Jan	04:53	-21.9	256.5	2	5	J	3
1957	19-Jan	06:45	12.2	276.4	7	61	C	3
	20-Jan	02:20	10.1	280.9	10	26	C	3
	22-Jan	06:25	10.4	278.2	18	45	D	3
	23-Jan	07:30	10.8	277.2	11	112	D	2
	24-Jan	08:18	10.9	277.7	10	72	D	3
	25-Jan	03:21	10.1	281.5	4	17	E	4
1958	19-Jan	06:45	-2.7	248.1	1	233	J	3
	20-Jan	02:20	-7.6	250.1	1	27	J	3
	22-Jan	06:25	-8.2	249.0	2	38	C	3
	23-Jan	07:30	-7.7	249.4	2	21	J	2
	24-Jan	08:18	-8.1	249.3	2	3	J	3
1959	19-Jan	06:45	-29.7	251.3	2	225	C	3
	20-Jan	02:20	-25.2	236.9	11	119	D	3
	22-Jan	06:25	-24.8	236.2	9	63	E	3
	23-Jan	07:30	-23.1	242.8	2	179	E	2
	24-Jan	08:18	-24.4	236.7	7	41	C	3
	25-Jan	03:21	-25.1	239.5	7	112	E	4
	27-Jan	04:53	-24.1	236.7	7	76	D	3
	28-Jan	02:48	-23.0	241.0	3	39	D	4
1960	19-Jan	06:45	-22.1	237.0	1	154	J	3
	20-Jan	02:20	-15.6	237.6	1	145	J	3
	22-Jan	06:25	-16.5	236.3	1	35	H	3
	23-Jan	07:30	-16.4	236.0	1	172	H	2

太陽黑子群發展表
DEVELOPMENT TABLE OF SUNSPOT-GROUPS

Observatory : Taipei Astronomical Museum

Lat. : 25.10° N Long. : 121.52° E

Group No.	Date	Obs. Time (U.T.)	Bs (°)	Ls (°)	n	A (msh)	T	Q
	24-Jan	08:18	-16.5	236.0	3	63	J	3
	25-Jan	03:21	-16.6	236.2	1	157	C	4
	27-Jan	04:53	-15.1	234.5	1	73	C	3
	28-Jan	02:48	-15.2	232.0	5	36	C	4
1961	20-Jan	02:20	-13.5	320.8	1	27	D	3
	22-Jan	06:25	-12.7	319.3	5	37	D	3
	23-Jan	07:30	-11.4	320.1	3	31	D	2
1962	20-Jan	02:20	-34.4	282.2	4	19	C	3
1963	22-Jan	06:25	-7.3	212.4	2	19	C	3
	23-Jan	07:30	-7.3	211.1	3	11	B	2
1964	22-Jan	06:25	-13.7	221.5	3	12	B	3
	23-Jan	07:30	-23.6	232.8	4	13	A	2
	27-Jan	04:53	-11.8	225.5	4	8	A	3
1965	22-Jan	06:25	-15.6	196.5	2	120	J	3
	23-Jan	07:30	-16.3	198.0	2	17	J	2
	24-Jan	08:18	-15.5	200.9	1	14	J	3
	25-Jan	03:21	-13.3	191.4	3	24	A	4
	27-Jan	04:53	-14.2	201.5	1	3	B	3
	28-Jan	02:48	-18.6	217.9	3	8	A	4
1966	27-Jan	04:53	-12.3	188.8	1	1	B	3
1967	27-Jan	04:53	-15.8	124.7	2	84	D	3
	28-Jan	02:48	-14.5	115.5	6	286	D	4
	31-Jan	02:34	-13.4	113.6	20	818	F	2
	1-Feb	09:29	-11.8	106.9	17	629	F	2
1968	28-Jan	02:48	8.8	119.2	3	130	D	4
	31-Jan	02:34	8.8	112.6	7	109	E	2
	1-Feb	09:29	8.9	108.9	9	125	E	2
1976	20-Feb	06:45	-14.5	319.0	1	75	J	3

太陽黑子群發展表
DEVELOPMENT TABLE OF SUNSPOT-GROUPS

Observatory : Taipei Astronomical Museum

Lat. : 25.10° N Long. : 121.52° E

Group No.	Date	Obs. Time (U.T.)	Bs (°)	Ls (°)	n	A (msh)	T	Q
	21-Feb	06:15	-16.5	319.0	1	133	J	3
1977	20-Feb	06:45	-9.6	292.9	6	16	C	3
	21-Feb	06:15	-10.0	294.9	4	26	C	3
1981	20-Feb	06:45	-6.6	215.7	14	99	D	3
	21-Feb	06:15	-6.9	214.9	15	130	D	3
	24-Feb	03:01	-2.7	205.6	7	120	E	3
	25-Feb	02:50	1.1	211.2	30	139	E	3
1982	20-Feb	06:45	-11.3	200.5	16	214	D	3
	21-Feb	06:15	-10.9	201.3	15	338	D	3
	24-Feb	03:01	-11.4	209.3	30	406	E	3
1983	24-Feb	03:01	-7.5	223.1	5	36	A	3
	25-Feb	02:50	-10.5	228.4	5	45	A	3
	25-Feb	02:50	-9.9	207.6	35	106	E	3
1984	20-Feb	06:45	-17.4	218.4	4	9	C	3
	21-Feb	06:15	-17.1	219.5	4	13	B	3
1985	20-Feb	06:45	6.4	293.8	1	4	B	3
	21-Feb	06:15	8.7	299.0	1	5	A	3
1986	21-Feb	06:15	13.1	173.9	3	46	B	3
	24-Feb	03:01	12.1	181.4	4	24	C	3
	25-Feb	02:50	10.8	177.8	11	22	C	3
1987	24-Feb	03:01	-1.8	150.7	6	156	D	3
	25-Feb	02:50	-8.5	150.8	7	148	D	3
1989	24-Feb	03:01	8.2	135.0	1	48	J	3
	25-Feb	02:50	5.3	131.4	5	69	C	3
1990	25-Feb	02:50	-15.6	112.7	1	168	H	3
1996	14-Mar	02:00	11.3	9.1	7	44	D	3
1998	14-Mar	02:00	-8.8	359.0	3	29	C	3
1999	14-Mar	02:00	-9.9	19.3	1	14	C	3

太陽黑子群發展表
DEVELOPMENT TABLE OF SUNSPOT-GROUPS

Observatory : Taipei Astronomical Museum

Lat. : 25.10° N Long. : 121.52° E

Group No.	Date	Obs. Time (U.T.)	Bs (°)	Ls (°)	n	A (msh)	T	Q
2000	14-Mar	02:00	-12.8	358.5	1	3	A	3
2002	14-Mar	02:00	-18.6	324.6	23	389	E	3
	17-Mar	06:30	-18.9	320.1	17	188	E	3
	18-Mar	02:55	-19.5	321.8	11	66	E	3
2003	14-Mar	02:00	5.8	10.6	6	247	D	3
2004	17-Mar	06:30	-10.8	293.6	4	22	B	3
	18-Mar	02:55	-11.2	291.1	8	8	B	3
2005	14-Mar	02:00	11.9	266.0	1	77	J	3
	17-Mar	06:30	12.4	261.9	4	286	C	3
	18-Mar	02:55	13.0	262.9	3	46	C	3
	23-Mar	02:45	12.4	264.0	3	120	J	4
	24-Mar	02:10	11.6	260.3	1	108	J	3
2007	14-Mar	02:00	10.0	244.4	1	147	J	3
	17-Mar	06:30	10.2	242.6	3	20	J	3
2008	17-Mar	06:30	-11.6	222.2	3	52	D	3
	18-Mar	02:55	-12.4	225.8	1	7	D	3
	23-Mar	02:45	-10.1	221.3	2	12	D	4
2009	17-Mar	06:30	11.9	284.0	4	15	B	3
2010	18-Mar	02:55	-13.7	200.7	1	12	B	3
	23-Mar	02:45	-14.4	201.6	18	95	D	4
	24-Mar	02:10	-14.1	203.5	13	111	D	3
	25-Mar	06:20	-15.0	200.5	14	111	D	2
	26-Mar	02:35	-13.9	205.8	19	79	D	4
	28-Mar	06:45	-15.7	199.3	5	44	D	3
2011	23-Mar	02:45	-6.9	281.0	3	70	B	4
2013	23-Mar	02:45	13.1	187.4	1	13	J	4
	24-Mar	02:10	15.3	186.4	1	15	J	3
2014	23-Mar	02:45	-13.2	170.1	3	95	D	4

太陽黑子群發展表
DEVELOPMENT TABLE OF SUNSPOT-GROUPS

Observatory : Taipei Astronomical Museum

Lat. : 25.10° N Long. : 121.52° E

Group No.	Date	Obs. Time (U.T.)	Bs (°)	Ls (°)	n	A (msh)	T	Q
	24-Mar	02:10	-16.4	166.8	10	104	D	3
	25-Mar	06:20	-17.1	166.7	22	69	D	2
	26-Mar	02:35	-10.6	168.8	30	47	E	4
	28-Mar	06:45	-10.4	169.2	8	51	E	3
2015	23-Mar	02:45	-12.0	232.8	10	57	D	4
	24-Mar	02:10	-15.0	232.7	2	29	D	3
	25-Mar	06:20	-15.1	228.8	2	42	C	2
	26-Mar	02:35	-15.8	227.0	3	19	D	4
2017	23-Mar	02:45	8.1	146.5	3	33	C	4
	24-Mar	02:10	9.3	143.7	2	62	C	3
	25-Mar	06:20	11.4	139.2	14	75	D	2
	26-Mar	02:35	13.3	142.8	16	58	D	4
	28-Mar	06:45	14.4	138.8	14	26	D	3
2018	25-Mar	06:20	-1.7	136.9	5	10	C	2
	26-Mar	02:35	0.2	137.2	8	13	C	4
	28-Mar	06:45	0.5	135.6	9	15	D	3
2020	28-Mar	06:45	-25.2	116.4	5	9	B	3
2021	28-Mar	06:45	13.3	67.7	3	18	D	3
	6-Apr	02:19	-14.0	70.4	7	115	D	3
2022	28-Mar	06:45	-16.2	73.0	1	11	J	3
2026	6-Apr	02:19	-9.8	25.9	5	20	E	3
	8-Apr	08:03	-12.2	19.8	6	25	E	3
	10-Apr	02:54	-9.8	26.1	4	7	C	3
2027	6-Apr	02:19	12.9	13.8	1	117	C	3
	8-Apr	08:03	12.5	12.5	1	28	C	3
	10-Apr	02:54	11.9	12.7	1	11	C	3
	11-Apr	02:45	12.0	11.3	1	101	J	3
2028	6-Apr	02:19	-11.0	15.5	3	40	A	3

太陽黑子群發展表
DEVELOPMENT TABLE OF SUNSPOT-GROUPS

Observatory : Taipei Astronomical Museum

Lat. : 25.10° N Long. : 121.52° E

Group No.	Date	Obs. Time (U.T.)	Bs (°)	Ls (°)	n	A (msh)	T	Q
	8-Apr	08:03	0.4	33.8	2	9	A	3
2029	6-Apr	02:19	17.0	30.7	1	18	C	3
	8-Apr	08:03	20.2	31.1	1	13	J	3
2030	6-Apr	02:19	9.0	357.9	3	38	E	3
	8-Apr	08:03	8.2	354.2	5	22	D	3
2031	8-Apr	08:03	3.0	24.4	1	8	C	3
	10-Apr	02:54	1.1	26.7	1	9	C	3
2032	8-Apr	08:03	13.5	283.5	3	71	D	3
	10-Apr	02:54	14.7	273.7	4	78	D	3
	11-Apr	02:45	13.6	273.1	6	107	E	3
	13-Apr	02:12	10.9	278.0	1	66	C	4
	15-Apr	07:00	11.5	274.3	1	36	J	4
	16-Apr	06:27	11.8	275.2	1	17	C	3
	17-Apr	06:50	11.8	275.6	1	97	J	3
	18-Apr	02:45	11.4	276.8	1	281	J	2
2033	10-Apr	02:54	9.2	262.2	1	16	J	3
	11-Apr	02:45	12.4	262.1	7	30	J	3
	13-Apr	02:12	12.4	266.9	1	42	J	4
	15-Apr	07:00	12.3	264.2	2	43	J	4
	16-Apr	06:27	13.0	263.0	1	13	J	3
	17-Apr	06:50	11.7	263.1	1	50	J	3
	18-Apr	02:45	11.3	263.7	1	255	J	2
2034	11-Apr	02:45	4.2	242.5	2	114	D	3
	13-Apr	02:12	4.0	249.1	2	151	D	4
	15-Apr	07:00	3.0	243.8	16	59	E	4
	16-Apr	06:27	3.0	243.2	18	63	E	3
	17-Apr	06:50	2.6	243.2	22	282	E	3
	18-Apr	02:45	3.1	243.0	16	476	D	2

太陽黑子群發展表
DEVELOPMENT TABLE OF SUNSPOT-GROUPS

Observatory : Taipei Astronomical Museum

Lat. : 25.10° N Long. : 121.52° E

Group No.	Date	Obs. Time (U.T.)	Bs (°)	Ls (°)	n	A (msh)	T	Q
	21-Apr	01:36	3.3	246.2	5	509	E	4
2035	13-Apr	02:12	-18.7	235.0	3	42	E	4
	15-Apr	07:00	-16.6	221.5	25	116	E	4
	16-Apr	06:27	-16.6	224.3	29	92	F	3
	17-Apr	06:50	-15.5	220.8	16	212	E	3
	18-Apr	02:45	-16.4	220.5	19	283	F	2
	21-Apr	01:36	-17.2	218.4	8	105	E	4
2036	15-Apr	07:00	-19.2	246.7	10	223	D	4
	16-Apr	06:27	-18.9	245.7	13	356	D	3
	17-Apr	06:50	-17.2	245.3	20	364	D	3
	18-Apr	02:45	-17.5	246.7	16	439	D	2
	21-Apr	01:36	-17.6	246.3	4	864	D	4
2037	15-Apr	07:00	-9.8	241.8	4	14	C	4
	16-Apr	06:27	-11.3	243.7	25	63	D	3
	17-Apr	06:50	-9.9	244.7	19	172	D	3
	18-Apr	02:45	-10.2	245.7	6	136	D	2
	21-Apr	01:36	-12.1	225.6	4	95	C	4
2038	15-Apr	07:00	-14.6	183.4	2	24	C	4
	16-Apr	06:27	-16.5	183.4	2	9	C	3
	17-Apr	06:50	-13.4	179.8	5	32	C	3
	18-Apr	02:45	-14.3	183.4	5	110	C	2
	21-Apr	01:36	-12.0	185.5	8	141	D	4
	25-Apr	07:10	-10.8	187.2	1	1006	D	3
2039	15-Apr	07:00	23.8	233.7	1	4	B	4
	16-Apr	06:27	27.2	237.7	6	9	B	3
	17-Apr	06:50	23.5	234.0	2	22	B	3
	18-Apr	02:45	22.7	235.7	2	17	B	2
2040	15-Apr	07:00	16.8	218.0	2	9	B	4

太陽黑子群發展表
DEVELOPMENT TABLE OF SUNSPOT-GROUPS

Observatory : Taipei Astronomical Museum

Lat. : 25.10° N Long. : 121.52° E

Group No.	Date	Obs. Time (U.T.)	Bs (°)	Ls (°)	n	A (msh)	T	Q
	16-Apr	06:27	15.6	220.6	6	11	B	3
	17-Apr	06:50	14.0	223.7	1	5	B	3
	18-Apr	02:45	13.5	221.7	1	8	B	2
2041	16-Apr	06:27	-22.4	262.8	5	10	B	3
	17-Apr	06:50	-19.8	262.2	1	6	B	3
2042	16-Apr	06:27	16.8	169.0	2	13	C	3
	17-Apr	06:50	18.1	162.7	5	405	C	3
	18-Apr	02:45	17.8	164.4	2	349	D	2
	21-Apr	01:36	17.1	167.9	1	274	C	4
	25-Apr	07:10	18.3	164.8	2	132	J	3
2044	21-Apr	01:36	-20.7	140.8	3	75	D	4
	25-Apr	07:10	-22.1	135.4	3	15	C	3
2045	21-Apr	01:36	-24.5	117.0	1	61	C	4
	25-Apr	07:10	-22.4	115.0	5	129	C	3
	28-Apr	02:24	-24.0	115.6	1	62	C	2
	2-May	07:07	-22.9	105.5	1	303	J	3
2046	25-Apr	07:10	-18.6	196.3	1	663	C	3
2047	28-Apr	02:24	-18.0	46.4	4	33	C	2
	2-May	07:07	-18.0	46.2	19	197	D	3
2048	28-Apr	02:24	19.1	123.8	5	20	D	2
2049	28-Apr	02:24	-7.2	12.9	2	244	D	2
	2-May	07:07	-7.9	13.8	23	241	E	3
2050	28-Apr	02:24	11.7	13.5	1	35	J	2
	2-May	07:07	11.2	13.7	1	211	J	3
2051	2-May	07:07	-11.3	55.9	16	42	B	3
2052	2-May	07:07	-11.0	330.0	2	266	C	3
	11-May	02:22	8.7	317.7	1	5	B	4
2054	11-May	02:22	-6.4	291.1	2	8	B	4

太陽黑子群發展表
DEVELOPMENT TABLE OF SUNSPOT-GROUPS

Observatory : Taipei Astronomical Museum

Lat. : 25.10° N Long. : 121.52° E

Group No.	Date	Obs. Time (U.T.)	Bs (°)	Ls (°)	n	A (msh)	T	Q
2055	11-May	02:22	10.4	276.4	2	300	E	4
	14-May	02:05	10.5	269.1	7	128	E	3
2056	11-May	02:22	4.1	256.4	4	111	E	4
	14-May	02:05	7.7	253.9	13	71	E	3
2057	11-May	02:22	13.2	250.5	1	31	J	4
2058	11-May	02:22	-12.6	234.9	5	23	F	4
2059	11-May	02:22	2.1	263.7	2	43	J	4
	14-May	02:05	1.4	263.0	1	62	J	3
2060	11-May	02:22	-17.9	222.6	3	26	D	4
	14-May	02:05	-15.1	231.0	27	166	D	3
2061	14-May	02:05	-24.9	194.9	1	12	J	3
2062	14-May	02:05	-8.0	291.8	4	21	C	3
2063	14-May	02:05	9.5	178.9	3	57	D	3
2064	14-May	02:05	7.7	196.7	2	10	B	3
2065	24-May	02:29	-20.3	148.9	4	34	D	2
2071	24-May	02:29	-13.4	80.1	7	25	D	2
	29-May	07:43	-11.9	88.8	1	5	A	4
2072	24-May	02:29	-15.0	134.0	3	13	A	2
2073	24-May	02:29	-12.2	63.7	4	40	D	2
	29-May	07:43	-11.7	59.9	11	15	C	4
	31-May	02:33	-14.1	63.7	2	9	D	2
2075	29-May	07:43	-9.3	25.1	1	3	J	4
	31-May	02:33	-10.0	25.6	4	13	C	2
	1-Jun	07:28	-9.6	24.1	1	9	C	3
2076	29-May	07:43	-23.8	46.2	5	17	D	4
	31-May	02:33	-20.7	54.6	1	4	A	2
	1-Jun	07:28	-14.4	60.5	1	17	A	3
2077	31-May	02:33	-6.7	295.1	1	934	C	2

太陽黑子群發展表
DEVELOPMENT TABLE OF SUNSPOT-GROUPS

Observatory : Taipei Astronomical Museum

Lat. : 25.10° N Long. : 121.52° E

Group No.	Date	Obs. Time (U.T.)	Bs (°)	Ls (°)	n	A (msh)	T	Q
	1-Jun	07:28	-18.9	327.2	6	25	C	3
	4-Jun	07:35	-4.3	300.3	10	89	C	3
2078	4-Jun	07:35	-18.8	331.4	1	14	A	3
2079	1-Jun	07:28	-5.2	297.8	6	73	J	3
	4-Jun	07:35	11.6	277.6	1	25	J	3
	12-Jun	03:45	11.4	281.9	4	173	D	3
	13-Jun	03:05	11.6	283.0	1	220	D	3
2080	4-Jun	07:35	-12.4	260.9	3	24	B	3
	12-Jun	03:45	-11.2	264.0	8	214	D	3
	13-Jun	03:05	-10.6	264.0	8	374	D	3
2082	12-Jun	03:45	13.3	253.5	11	109	D	3
	13-Jun	03:05	13.6	253.3	9	141	D	3
2085	12-Jun	03:45	-20.2	257.4	22	462	E	3
	13-Jun	03:05	-19.8	258.1	17	686	E	3
2087	12-Jun	03:45	-19.0	156.2	10	303	D	3
	13-Jun	03:05	-17.9	157.7	17	183	D	3
	18-Jun	02:48	-18.4	154.5	4	76	D	2
2088	12-Jun	03:45	-11.0	246.4	5	21	C	3
	13-Jun	03:05	-10.2	247.0	7	56	C	3
2089	12-Jun	03:45	15.8	197.3	12	49	C	3
	13-Jun	03:05	16.7	197.5	10	49	D	3
	18-Jun	02:48	18.1	196.4	6	109	D	2
2090	12-Jun	03:45	24.6	144.3	2	309	J	3
	13-Jun	03:05	23.8	144.3	2	107	D	3
	18-Jun	02:48	23.6	144.4	1	76	J	2
2091	12-Jun	03:45	-9.6	203.0	5	54	D	3
	13-Jun	03:05	-9.1	201.2	3	16	D	3
2092	12-Jun	03:45	-20.2	137.6	3	131	C	3

太陽黑子群發展表
DEVELOPMENT TABLE OF SUNSPOT-GROUPS

Observatory : Taipei Astronomical Museum

Lat. : 25.10° N Long. : 121.52° E

Group No.	Date	Obs. Time (U.T.)	Bs (°)	Ls (°)	n	A (msh)	T	Q
	13-Jun	03:05	-19.7	139.6	7	33	C	3
	18-Jun	02:48	-19.9	141.1	3	19	B	2
2093	18-Jun	02:48	-10.1	84.3	6	29	C	2
	25-Jun	01:40	-10.8	78.7	1	2	A	3
	27-Jun	03:52	-8.7	93.5	1	60	C	3
2096	25-Jun	01:40	7.5	356.3	3	139	J	3
	27-Jun	03:52	8.7	357.9	4	54	C	3
	28-Jun	01:53	8.0	357.7	3	93	C	3
	30-Jun	06:19	9.1	356.5	2	25	C	3
2097	25-Jun	01:40	11.2	349.6	1	50	J	3
	27-Jun	03:52	12.2	352.1	1	26	J	3
	28-Jun	01:53	11.4	351.1	1	13	J	3
	30-Jun	06:19	11.5	349.1	1	21	J	3
	2-Jul	02:30	8.3	358.0	1	5	J	3
2098	25-Jun	01:40	-10.2	21.4	6	37	D	3
	27-Jun	03:52	-9.2	21.5	5	18	D	3
	28-Jun	01:53	-9.8	21.5	2	13	C	3
2100	27-Jun	03:52	8.8	313.0	1	10	B	3
	28-Jun	01:53	8.8	309.8	4	18	B	3
	30-Jun	06:19	8.4	308.8	14	39	B	3
	2-Jul	02:30	9.7	306.1	17	37	D	3
	3-Jul	02:20	9.8	305.8	5	53	C	2
	4-Jul	02:10	9.9	305.9	5	38	D	3
	5-Jul	02:25	8.7	307.8	5	15	C	3
2102	30-Jun	06:19	13.3	275.6	1	10	A	3
	2-Jul	02:30	11.6	278.2	13	87	D	3
	3-Jul	02:20	11.6	276.7	12	127	D	2
	4-Jul	02:10	10.9	278.8	10	74	D	3

太陽黑子群發展表
DEVELOPMENT TABLE OF SUNSPOT-GROUPS

Observatory : Taipei Astronomical Museum

Lat. : 25.10° N Long. : 121.52° E

Group No.	Date	Obs. Time (U.T.)	Bs (°)	Ls (°)	n	A (msh)	T	Q
	5-Jul	02:25	10.0	280.3	4	47	D	3
	6-Jul	07:39	10.5	279.4	1	23	C	3
2103	28-Jun	01:53	-11.1	295.5	1	9	A	3
2104	30-Jun	06:19	-10.7	267.5	8	325	D	3
	2-Jul	02:30	-10.4	268.3	10	392	D	3
	3-Jul	02:20	-12.2	268.2	10	423	D	2
	4-Jul	02:10	-12.6	269.2	18	457	D	3
	5-Jul	02:25	-12.3	269.0	12	238	D	3
	6-Jul	07:39	-12.2	268.5	5	147	D	3
2105	30-Jun	06:19	-7.1	308.5	6	18	C	3
2106	30-Jun	06:19	13.7	257.4	3	38	C	3
	2-Jul	02:30	14.3	259.5	6	91	D	3
	3-Jul	02:20	14.5	259.6	6	137	D	2
	4-Jul	02:10	13.9	260.8	12	154	D	3
	5-Jul	02:25	14.1	262.2	6	115	D	3
	6-Jul	07:39	14.6	261.6	2	76	D	3
2107	30-Jun	06:19	-20.0	253.5	3	489	D	3
	2-Jul	02:30	-20.4	258.0	5	481	D	3
	3-Jul	02:20	-20.2	258.4	4	259	D	2
	4-Jul	02:10	-20.0	258.9	6	150	D	3
	5-Jul	02:25	-19.3	257.2	4	379	G	3
	6-Jul	07:39	-19.3	256.1	5	213	E	3
2108	2-Jul	02:30	-8.7	239.8	5	109	D	3
	3-Jul	02:20	-9.1	239.9	8	160	D	2
	4-Jul	02:10	-9.2	237.7	12	144	D	3
	5-Jul	02:25	-8.5	242.7	12	198	D	3
	6-Jul	07:39	-8.1	242.4	4	272	D	3
	12-Jul	02:48	-6.5	239.1	12	612	E	2

太陽黑子群發展表
DEVELOPMENT TABLE OF SUNSPOT-GROUPS

Observatory : Taipei Astronomical Museum

Lat. : 25.10° N Long. : 121.52° E

Group No.	Date	Obs. Time (U.T.)	Bs (°)	Ls (°)	n	A (msh)	T	Q
	13-Jul	02:15	-7.6	238.4	5	452	E	4
2109	3-Jul	02:20	-9.5	219.4	3	511	J	2
	4-Jul	02:10	-8.6	219.3	9	911	D	3
	5-Jul	02:25	-8.5	219.6	13	723	E	3
	6-Jul	07:39	-8.6	221.2	21	710	E	3
	12-Jul	02:48	-7.6	220.8	7	566	D	2
	13-Jul	02:15	-8.3	221.0	4	742	D	4
2110	4-Jul	02:10	-17.5	230.4	1	8	B	3
	5-Jul	02:25	-16.1	235.6	4	21	B	3
	6-Jul	07:39	-7.8	237.1	5	293	D	3
2111	4-Jul	02:10	5.3	202.1	1	378	C	3
	5-Jul	02:25	5.2	204.5	2	71	C	3
	6-Jul	07:39	5.6	204.5	3	75	D	3
	12-Jul	02:48	6.3	204.4	7	48	C	2
	13-Jul	02:15	6.7	204.8	2	28	D	4
2112	6-Jul	07:39	-12.6	297.7	3	45	B	3
2113	12-Jul	02:48	7.3	166.6	5	39	C	2
	13-Jul	02:15	6.9	165.8	9	56	C	4
2114	12-Jul	02:48	-20.9	148.4	8	70	D	2
	13-Jul	02:15	-20.4	147.8	12	42	C	4
2117	12-Jul	02:48	7.3	159.2	3	26	C	2
	13-Jul	02:15	8.4	156.0	1	9	C	4
	15-Jul	03:32	5.9	166.1	3	39	A	2
2119	24-Jul	02:35	-22.4	70.5	1	26	C	2
2121	24-Jul	02:35	5.4	322.7	3	117	D	2
	26-Jul	06:25	7.4	321.9	6	136	C	3
	28-Jul	06:15	5.8	320.1	8	279	C	3
	29-Jul	02:50	6.6	321.0	6	100	C	3

太陽黑子群發展表
DEVELOPMENT TABLE OF SUNSPOT-GROUPS

Observatory : Taipei Astronomical Museum

Lat. : 25.10° N Long. : 121.52° E

Group No.	Date	Obs. Time (U.T.)	Bs (°)	Ls (°)	n	A (msh)	T	Q
	30-Jul	02:33	6.5	322.7	4	130	C	4
	1-Aug	07:45	8.1	323.8	3	37	C	3
2122	24-Jul	02:35	-14.9	340.0	3	32	C	2
	26-Jul	06:25	-14.2	327.1	2	13	A	3
2123	24-Jul	02:35	-15.6	324.0	2	45	C	2
	26-Jul	06:25	-14.4	320.5	1	34	D	3
	28-Jul	06:15	-14.1	318.5	6	32	C	3
	29-Jul	02:50	-15.5	320.6	3	17	C	3
	30-Jul	02:33	-15.1	321.2	1	14	A	4
2124	26-Jul	06:25	-21.8	272.9	1	25	A	3
	28-Jul	06:15	-20.6	273.6	1	4	A	3
	29-Jul	02:50	-22.2	273.6	1	7	A	3
2125	26-Jul	06:25	-13.6	265.2	1	22	C	3
	28-Jul	06:15	-12.7	266.2	1	82	C	3
	29-Jul	02:50	-13.9	266.5	3	47	C	3
	30-Jul	02:33	-14.2	267.3	1	23	J	4
	1-Aug	07:45	-13.0	266.2	2	13	J	3
2126	28-Jul	06:15	-9.2	320.1	10	80	D	3
	29-Jul	02:50	-10.8	323.9	17	119	D	3
	30-Jul	02:33	-10.1	324.0	14	226	E	4
	1-Aug	07:45	-9.1	325.6	5	157	D	3
2127	28-Jul	06:15	-8.6	247.2	1	751	D	3
	29-Jul	02:50	-9.9	249.8	4	399	D	3
	30-Jul	02:33	-9.4	250.1	6	169	D	4
	1-Aug	07:45	-7.4	249.3	7	143	D	3
	6-Aug	02:50	-8.6	250.4	4	67	D	3
	8-Aug	02:10	-19.4	215.5	2	147	B	3
2128	28-Jul	06:15	-20.7	247.3	1	63	J	3

太陽黑子群發展表
DEVELOPMENT TABLE OF SUNSPOT-GROUPS

Observatory : Taipei Astronomical Museum

Lat. : 25.10° N Long. : 121.52° E

Group No.	Date	Obs. Time (U.T.)	Bs (°)	Ls (°)	n	A (msh)	T	Q
	29-Jul	02:50	-22.0	249.2	1	37	J	3
	30-Jul	02:33	-21.6	250.0	1	22	J	4
	1-Aug	07:45	-20.2	248.4	1	14	J	3
	7-Aug	08:50	-12.3	260.0	3	83	D	4
	7-Aug	08:50	-20.8	249.3	4	79	C	4
2130	29-Jul	02:50	-8.8	228.8	1	291	D	3
	30-Jul	02:33	-8.7	226.9	8	245	D	4
	1-Aug	07:45	-7.3	230.5	13	124	D	3
	6-Aug	02:50	-8.1	229.4	13	58	F	3
	7-Aug	08:50	-7.4	233.5	3	48	J	4
	8-Aug	02:10	-19.2	210.7	4	36	B	3
2131	30-Jul	02:33	-19.6	237.2	4	45	C	4
	1-Aug	07:45	-18.6	237.4	9	42	D	3
	6-Aug	02:50	-20.8	251.1	1	13	J	3
2132	1-Aug	07:45	-18.8	211.0	7	245	C	3
	6-Aug	02:50	-19.6	211.0	26	164	E	3
	8-Aug	02:10	-20.8	205.9	6	103	E	3
2134	6-Aug	02:50	8.6	173.7	9	175	G	3
	7-Aug	08:50	12.5	173.8	27	171	D	4
	8-Aug	02:10	7.9	175.1	18	67	D	3
2135	7-Aug	08:50	12.6	128.8	4	179	C	4
	8-Aug	02:10	11.0	128.3	7	280	D	3
	14-Aug	03:32	13.6	134.0	2	189	C	2
2137	14-Aug	03:32	-20.1	163.1	1	35	B	2
2139	14-Aug	03:32	13.2	55.3	13	157	D	2
	18-Aug	02:00	13.8	54.2	11	163	C	2
2141	18-Aug	02:00	15.7	24.5	18	193	E	2
2143	18-Aug	02:00	-5.8	33.2	3	44	C	2

太陽黑子群發展表
DEVELOPMENT TABLE OF SUNSPOT-GROUPS

Observatory : Taipei Astronomical Museum

Lat. : 25.10° N Long. : 121.52° E

Group No.	Date	Obs. Time (U.T.)	Bs (°)	Ls (°)	n	A (msh)	T	Q
2144	18-Aug	02:00	-18.2	106.2	2	1702	D	2
2146	18-Aug	02:00	7.7	344.8	1	109	J	2
	26-Aug	03:00	6.8	342.9	9	619	D	3
	28-Aug	08:57	7.4	338.1	1	263	D	4
2147	18-Aug	02:00	-9.8	334.5	1	1082	C	2
2148	26-Aug	03:00	5.4	323.7	5	39	C	3
	28-Aug	08:57	7.0	317.7	2	47	B	4
	29-Aug	02:00	6.7	345.0	1	192	B	3
2149	26-Aug	03:00	7.4	276.7	18	264	E	3
	28-Aug	08:57	9.0	279.6	1	146	E	4
	29-Aug	02:00	7.1	280.9	13	344	C	3
	2-Sep	02:44	7.1	281.8	2	1895	D	2
2150	26-Aug	03:00	-14.8	265.7	2	385	C	3
	28-Aug	08:57	-13.4	263.2	1	76	C	4
	29-Aug	02:00	-13.6	265.7	1	155	J	3
	2-Sep	02:44	-14.3	266.1	1	107	J	2
	3-Sep	07:11	-14.5	260.9	1	144	J	3
2151	26-Aug	03:00	-9.1	253.0	1	282	C	3
	28-Aug	08:57	-8.5	251.2	1	131	J	4
	29-Aug	02:00	-7.5	254.0	1	226	J	3
	2-Sep	02:44	-9.0	254.4	1	165	J	2
	3-Sep	07:11	-7.9	255.1	1	154	J	3
2152	29-Aug	02:00	-17.8	204.3	6	1325	C	3
	2-Sep	02:44	-16.6	209.2	13	169	D	2
	3-Sep	07:11	-15.8	204.4	22	245	E	3
	5-Sep	02:51	-16.0	201.4	9	167	E	3
2153	29-Aug	02:00	-11.8	227.2	3	33	A	3
	2-Sep	02:44	-10.9	233.5	6	50	C	2

太陽黑子群發展表
DEVELOPMENT TABLE OF SUNSPOT-GROUPS

Observatory : Taipei Astronomical Museum

Lat. : 25.10° N Long. : 121.52° E

Group No.	Date	Obs. Time (U.T.)	Bs (°)	Ls (°)	n	A (msh)	T	Q
	3-Sep	07:11	-9.4	230.1	6	77	D	3
	5-Sep	02:51	-9.9	232.2	2	255	D	3
2154	3-Sep	07:11	-18.6	153.9	5	11	C	3
	5-Sep	02:51	-19.3	158.5	7	15	C	3
2155	5-Sep	02:51	-24.2	104.5	4	1477	D	3
	8-Sep	06:27	-20.0	106.7	4	71	C	4
	11-Sep	02:20	-20.5	108.3	6	35	C	3
2156	5-Sep	02:51	12.9	114.7	2	10	B	3
2157	5-Sep	02:51	-14.8	93.7	8	1640	D	3
	8-Sep	06:27	-10.3	99.8	20	280	E	4
	11-Sep	02:20	-15.2	95.9	35	382	E	3
	14-Sep	06:53	-14.0	93.8	4	81	E	2
	16-Sep	02:23	-15.3	91.1	1	63	C	2
2158	5-Sep	02:51	14.2	84.8	1	325	J	3
	8-Sep	06:27	15.0	86.0	9	448	D	4
	11-Sep	02:20	14.8	88.0	23	462	D	3
	14-Sep	06:53	15.5	87.8	5	87	C	2
	16-Sep	02:23	14.4	88.1	4	159	D	2
2159	8-Sep	06:27	-20.9	76.9	5	19	C	4
	11-Sep	02:20	-21.2	82.2	4	15	A	3
2160	8-Sep	06:27	-9.4	188.1	2	529	D	4
2161	8-Sep	06:27	-12.5	149.2	1	7	D	4
	11-Sep	02:20	-13.0	154.5	1	16	A	3
2162	5-Sep	02:51	9.1	154.3	1	3	C	3
	8-Sep	06:27	8.7	147.7	1	6	J	4
	11-Sep	02:20	8.6	146.1	1	14	C	3
2163	8-Sep	06:27	-14.9	66.9	2	55	C	4
	11-Sep	02:20	-16.4	67.0	3	66	D	3

太陽黑子群發展表
DEVELOPMENT TABLE OF SUNSPOT-GROUPS

Observatory : Taipei Astronomical Museum

Lat. : 25.10° N Long. : 121.52° E

Group No.	Date	Obs. Time (U.T.)	Bs (°)	Ls (°)	n	A (msh)	T	Q
	14-Sep	06:53	-14.5	65.7	1	16	J	2
	17-Sep	07:32	-12.7	52.1	1	31	B	2
2164	11-Sep	02:20	-14.4	46.5	2	22	C	3
	14-Sep	06:53	-12.3	48.0	7	80	D	2
	16-Sep	02:23	-14.2	47.6	3	67	D	2
	17-Sep	07:32	-13.2	44.1	4	69	G	2
	18-Sep	07:47	-13.5	44.6	4	84	D	3
	19-Sep	02:30	-13.9	47.4	3	61	D	3
2165	16-Sep	02:23	-9.0	10.8	3	17	B	2
2166	14-Sep	06:53	12.2	354.1	3	40	C	2
	16-Sep	02:23	10.4	356.2	4	36	C	2
	17-Sep	07:32	11.6	355.1	6	17	C	2
	18-Sep	07:47	11.8	354.3	6	14	C	3
	19-Sep	02:30	10.7	355.7	4	8	C	3
2168	19-Sep	02:30	-21.0	312.3	4	18	C	3
2169	17-Sep	07:32	4.2	289.6	1	49	C	2
	18-Sep	07:47	4.8	290.0	2	31	C	3
	19-Sep	02:30	4.2	291.7	2	31	C	3
2170	17-Sep	07:32	9.3	289.3	1	42	J	2
	18-Sep	07:47	9.9	289.6	1	23	J	3
	19-Sep	02:30	9.3	291.1	1	46	J	3
	26-Sep	02:45	-10.4	299.0	1	7	A	4
	27-Sep	02:25	-8.9	268.8	2	64	A	2
2171	19-Sep	02:30	-10.4	264.4	2	197	D	3
	26-Sep	02:45	-9.5	269.8	9	56	G	4
	27-Sep	02:25	-10.4	257.9	4	33	G	2
	30-Sep	02:05	-9.1	271.6	1	63	C	3
2172	26-Sep	02:45	-11.8	238.5	33	477	E	4

太陽黑子群發展表
DEVELOPMENT TABLE OF SUNSPOT-GROUPS

Observatory : Taipei Astronomical Museum

Lat. : 25.10° N Long. : 121.52° E

Group No.	Date	Obs. Time (U.T.)	Bs (°)	Ls (°)	n	A (msh)	T	Q
	27-Sep	02:25	-12.4	238.2	23	669	E	2
	30-Sep	02:05	-12.0	234.1	11	97	F	3
2173	26-Sep	02:45	-15.2	255.4	21	125	C	4
	27-Sep	02:25	-16.9	247.5	15	127	C	2
	30-Sep	02:05	-13.1	247.0	11	289	E	3
2175	26-Sep	02:45	13.8	260.8	30	185	C	4
	27-Sep	02:25	14.6	259.8	13	263	D	2
	30-Sep	02:05	14.2	260.4	9	488	E	3
2176	30-Sep	02:05	6.4	208.4	6	14	B	3
2177	26-Sep	02:45	11.4	170.9	4	68	J	4
	27-Sep	02:25	10.1	167.3	3	181	D	2
	30-Sep	02:05	10.5	168.8	22	112	E	3
2178	30-Sep	02:05	-3.3	152.1	7	132	C	3
	8-Oct	03:06	-2.7	155.7	1	17	J	3
2179	30-Sep	02:05	-11.7	140.9	1	51	J	3
2181	30-Sep	02:05	-11.8	160.0	2	13	J	3
	8-Oct	03:06	-12.9	167.0	1	114	C	3
2182	8-Oct	03:06	-14.9	120.9	8	33	C	3
2184	8-Oct	03:06	-21.7	70.6	2	6	B	3
2185	8-Oct	03:06	-14.3	58.0	1	3	B	3
	15-Oct	03:17	-17.5	54.9	1	5	B	3
2186	8-Oct	03:06	-21.9	17.5	1	207	H	3
	15-Oct	03:17	-22.3	17.4	3	161	C	3
	16-Oct	07:33	-20.9	16.3	1	110	J	4
	17-Oct	07:42	-19.8	25.0	2	149	C	2
	18-Oct	07:47	-20.9	15.0	1	139	J	4
	19-Oct	07:45	-20.7	16.2	1	95	J	3
2187	15-Oct	03:17	-10.6	321.5	4	73	C	3

太陽黑子群發展表
DEVELOPMENT TABLE OF SUNSPOT-GROUPS

Observatory : Taipei Astronomical Museum

Lat. : 25.10° N Long. : 121.52° E

Group No.	Date	Obs. Time (U.T.)	Bs (°)	Ls (°)	n	A (msh)	T	Q
	16-Oct	07:33	-8.9	321.4	1	160	C	4
	17-Oct	07:42	-11.2	326.1	1	282	C	2
	18-Oct	07:47	-7.8	320.1	2	120	J	4
	19-Oct	07:45	-8.2	320.8	3	92	C	3
	20-Oct	03:30	16.2	261.9	1	160	C	4
	21-Oct	07:20	-8.3	321.0	2	203	J	3
	24-Oct	02:20	-9.3	322.2	1	203	J	3
2188	15-Oct	03:17	16.0	23.3	5	13	B	3
2189	15-Oct	03:17	18.8	341.8	6	16	B	3
2190	15-Oct	03:17	22.3	303.8	1	17	B	3
2191	18-Oct	07:47	-8.2	312.5	2	4	A	4
	19-Oct	07:45	-9.4	304.4	2	7	B	3
2192	17-Oct	07:42	-19.5	265.5	5	89	D	2
	18-Oct	07:47	-13.3	245.4	9	1267	D	4
	19-Oct	07:45	-14.7	247.6	19	483	F	3
	20-Oct	03:30	19.5	342.9	12	380	E	4
	21-Oct	07:20	-12.7	245.0	36	710	F	3
	24-Oct	02:20	-13.6	245.7	45	2687	F	3
	26-Oct	01:50	-12.0	245.1	58	2132	F	4
	27-Oct	01:10	-13.6	244.5	37	1864	F	3
	28-Oct	02:35	-13.9	245.8	18	3153	F	3
2193	19-Oct	07:45	4.9	283.8	7	33	C	3
	20-Oct	03:30	5.4	300.6	5	65	C	4
	21-Oct	07:20	5.6	285.9	5	60	D	3
	24-Oct	02:20	4.6	286.9	4	74	D	3
	26-Oct	01:50	5.6	287.2	1	50	J	4
2194	21-Oct	07:20	-12.2	208.0	2	118	C	3
	24-Oct	02:20	-12.6	209.1	3	42	C	3

太陽黑子群發展表
DEVELOPMENT TABLE OF SUNSPOT-GROUPS

Observatory : Taipei Astronomical Museum

Lat. : 25.10° N Long. : 121.52° E

Group No.	Date	Obs. Time (U.T.)	Bs (°)	Ls (°)	n	A (msh)	T	Q
	26-Oct	01:50	-12.1	209.7	4	26	J	4
	27-Oct	01:10	-17.8	209.0	2	57	J	3
	28-Oct	02:35	-11.6	211.2	1	57	J	3
	31-Oct	05:50	-12.6	209.0	1	23	J	4
2195	24-Oct	02:20	7.3	179.8	5	77	D	3
	26-Oct	01:50	7.4	181.9	10	97	D	4
	27-Oct	01:10	6.7	183.9	1	45	E	3
	28-Oct	02:35	7.5	185.7	4	103	C	3
	31-Oct	05:50	7.4	183.2	1	82	J	4
	1-Nov	07:47	7.7	184.0	1	92	J	3
2196	24-Oct	02:20	-3.8	157.3	1	42	J	3
	26-Oct	01:50	-3.6	161.4	1	9	J	4
	27-Oct	01:10	-3.9	161.1	1	16	J	3
	28-Oct	02:35	-3.1	163.3	1	14	J	3
	31-Oct	05:50	-3.3	160.2	1	11	A	4
2197	24-Oct	02:20	-13.1	160.7	1	36	A	3
	26-Oct	01:50	-12.7	166.4	1	8	A	4
	27-Oct	01:10	-12.7	164.1	9	22	D	3
	28-Oct	02:35	-13.5	161.3	3	19	C	3
	5-Nov	02:19	-14.8	158.7	1	51	J	4
2199	31-Oct	05:50	-15.4	123.2	4	10	C	4
2200	31-Oct	05:50	-15.6	100.0	3	33	C	4
	1-Nov	07:47	-15.3	101.1	1	14	J	3
	5-Nov	02:19	-17.4	103.5	1	7	A	4
2201	31-Oct	05:50	-4.6	82.7	2	85	J	4
	1-Nov	07:47	-3.9	82.8	2	89	C	3
	5-Nov	02:19	-4.9	86.8	13	52	D	4
	6-Nov	03:05	-6.4	87.1	14	64	D	4

太陽黑子群發展表
DEVELOPMENT TABLE OF SUNSPOT-GROUPS

Observatory : Taipei Astronomical Museum

Lat. : 25.10° N Long. : 121.52° E

Group No.	Date	Obs. Time (U.T.)	Bs (°)	Ls (°)	n	A (msh)	T	Q
	7-Nov	02:27	-5.4	87.4	6	41	D	3
2202	31-Oct	05:50	12.3	130.6	4	26	B	4
	1-Nov	07:47	12.0	129.2	8	71	C	3
	5-Nov	02:19	12.0	116.2	2	108	B	4
	6-Nov	03:05	11.5	132.2	2	14	B	4
2203	1-Nov	07:47	12.9	111.7	3	10	C	3
	5-Nov	02:19	10.7	110.0	2	49	D	4
	6-Nov	03:05	12.7	117.2	4	89	D	4
	7-Nov	02:27	13.4	118.3	1	151	C	3
2204	1-Nov	07:47	6.7	68.8	1	20	C	3
	5-Nov	02:19	4.3	74.6	1	10	A	4
	6-Nov	03:05	4.2	74.9	2	15	A	4
	7-Nov	02:27	4.8	75.1	2	8	C	3
2205	5-Nov	02:19	14.2	13.1	6	349	E	4
	6-Nov	03:05	14.3	11.9	15	433	E	4
	7-Nov	02:27	14.3	11.8	17	435	E	3
	11-Nov	07:49	14.6	10.7	27	175	D	3
2206	5-Nov	02:19	-14.9	33.1	2	23	B	4
	6-Nov	03:05	-16.1	32.1	1	5	B	4
	7-Nov	02:27	-16.7	17.3	1	7	A	3
2207	11-Nov	07:49	-8.0	322.6	1	28	J	3
2208	11-Nov	07:49	-10.4	306.3	16	97	C	3
2209	11-Nov	07:49	5.7	289.2	1	12	J	3
	20-Nov	03:07	-15.7	245.0	14	1102	F	3
	22-Nov	02:17	-14.9	241.9	16	788	F	4
	23-Nov	02:34	-15.4	242.6	16	1078	F	4
	24-Nov	01:50	-16.1	241.7	15	928	F	4
	25-Nov	07:50	-15.5	240.2	7	907	F	3

太陽黑子群發展表
DEVELOPMENT TABLE OF SUNSPOT-GROUPS

Observatory : Taipei Astronomical Museum

Lat. : 25.10° N Long. : 121.52° E

Group No.	Date	Obs. Time (U.T.)	Bs (°)	Ls (°)	n	A (msh)	T	Q
2216	20-Nov	03:07	-15.4	163.7	2	288	D	3
	22-Nov	02:17	-14.4	162.4	11	697	D	4
	23-Nov	02:34	-14.0	164.7	14	466	D	4
	24-Nov	01:50	-14.2	164.8	20	405	D	4
	25-Nov	07:50	-12.5	163.8	14	382	D	3
2217	23-Nov	02:34	-19.4	121.6	2	225	C	4
	24-Nov	01:50	-19.2	125.3	7	287	C	4
	25-Nov	07:50	-19.0	122.1	5	153	C	3
2218	24-Nov	01:50	13.7	108.2	1	317	C	4
	25-Nov	07:50	15.7	109.0	2	154	C	3
	5-Dec	07:25	16.7	109.6	1	172	J	3
2219	23-Nov	02:34	4.4	189.9	2	7	B	4
	25-Nov	07:50	5.5	156.8	7	23	B	3
2222	5-Dec	07:25	-19.1	84.7	13	776	E	3
2226	5-Dec	07:25	-18.0	105.9	1	19	C	3
2227	5-Dec	07:25	-3.5	0.4	1	128	J	3
2229	5-Dec	07:25	-21.8	358.9	2	12	B	3
2230	15-Dec	02:52	-14.4	323.5	7	189	D	2
2232	7-Aug	08:50	-18.5	207.9	24	292	E	4
	15-Dec	02:52	7.8	290.3	3	12	B	2
2234	15-Dec	02:52	3.4	319.7	2	102	C	2
2235	15-Dec	02:52	-8.2	266.1	3	166	C	2
2236	15-Dec	02:52	29.4	241.9	3	63	C	2
	22-Dec	07:58	29.3	238.2	1	58	J	1
2237	15-Dec	02:52	-13.5	250.6	2	71	C	2
2239	15-Dec	02:52	13.0	251.0	8	41	C	2
2240	15-Dec	02:52	9.4	217.2	1	35	J	2
2241	15-Dec	02:52	-11.0	214.2	7	92	D	2

太陽黑子群發展表
DEVELOPMENT TABLE OF SUNSPOT-GROUPS

Observatory : Taipei Astronomical Museum

Lat. : 25.10° N Long. : 121.52° E

Group No.	Date	Obs. Time (U.T.)	Bs (°)	Ls (°)	n	A (msh)	T	Q
	22-Dec	07:58	-9.3	219.1	8	306	E	1
	24-Dec	02:31	-9.9	220.8	2	186	C	2
2242	15-Dec	02:52	-19.9	238.0	10	144	D	2
	22-Dec	07:58	-16.7	239.8	6	460	E	1
	24-Dec	02:31	-16.0	235.8	2	374	D	2
2244	22-Dec	07:58	-2.8	154.0	3	92	D	1
	24-Dec	02:31	-5.3	156.4	12	87	D	2
2245	22-Dec	07:58	7.8	121.7	1	13	C	1
	24-Dec	02:31	7.7	121.9	3	21	C	2
2246	22-Dec	07:58	16.8	107.1	1	175	J	1
	24-Dec	02:31	15.6	109.5	1	58	J	2
2247	24-Dec	02:31	-26.1	98.5	1	34	J	2
2248	24-Dec	02:31	-22.0	83.6	1	117	J	2

2014年太陽黑子每日相對數表
Daily Relative Sunspot Numbers of 2014

月 日	Jan. 一月	Feb. 二月	Mar. 三月	Apr. 四月	May 五月	Jun. 六月	Jul. 七月	Aug. 八月	Sep. 九月	Oct. 十月	Nov. 十一月	Dec. 十二月
1	105	46				54		127			76	
2					122		127		73			
3	145						118		85			
4						55	164					
5	95						152		114		108	68
6				80			139	103			98	
7	161							125			77	
8				89				87	124	74		
9												
10				61								
11	93			56	100				155		85	
12						182	102					
13				47		181	93					
14			123		138			46	70			
15	77			153			13			80		146
16	77			218					65	22		
17			95	203					63	38		
18			74	169		70		96	53	54		
19	96								76	82		
20	122	102								48	36	
21		113		114						85		
22	148										47	80
23	131		123								74	
24	84	113	89		58		49			130	83	92
25	67	164	107	62		51					85	
26			126				61	85	158	135		
27	88					62			120	100		
28	70		115	63		61	98	56		77		
29		—			58		116	85				
30		—				118	119		160			
31	47	—		—	48	—			—	86	—	

黑子總數：11312

觀測天數：118

年平均數：95.9

1948年至2014年之每月太陽黑子相對數及平均值
 Monthly and Smooth Relative Sunspot Numbers since 1948 to 2014

Year 年		Jan. 一月	Feb. 二月	Mar. 三月	Apr. 四月	May 五月	Jun. 六月	Jul. 七月	Aug. 八月	Sep. 九月	Oct. 十月	Nov. 十一月	Dec. 十二月
1948	Wolf	107.5	66.3	92.1	159.8	128.0	146.3	107.4	138.8	120.1	98.6	86.2	113.0
	Smooth	130.1	127.4	123.4	118.8	114.6	113.2	114.0	118.3	125.6	128.2	126.3	124.0
1949	Wolf	116.4	160.0	172.6	141.3	101.5	118.2	122.2	130.7	150.9	132.6	152.1	121.8
	Smooth	123.5	123.7	124.7	127.4	131.5	134.7	134.6	130.7	124.7	120.5	119.5	118.5
1950	Wolf	105.2	79.4	109.4	102.4	116.2	80.0	75.3	82.0	53.3	72.2	57.7	65.7
	Smooth	115.0	111.0	104.9	98.3	91.8	85.6	80.6	76.9	73.5	70.6	68.7	66.6
1951	Wolf	41.7	55.5	50.3	92.7	79.5	65.9	60.4	51.6	79.7	61.1	67.1	44.8
	Smooth	65.4	63.5	63.3	63.9	63.9	63.4	62.4	60.5	57.6	53.7	48.4	45.0
1952	Wolf	39.4	12.5	23.9	24.0	20.8	44.0	35.5	61.6	25.5	24.7	25.4	37.2
	Smooth	43.1	42.5	40.6	36.8	33.6	31.5	31.1	30.8	29.9	30.5	31.6	30.7
1953	Wolf	37.7	5.7	8.8	53.8	17.3	27.2	8.0	28.1	25.1	14.6	2.4	4.1
	Smooth	28.9	26.3	24.9	24.5	23.1	20.8	17.8	16.1	15.9	13.7	10.8	9.0
1954	Wolf	0.0	0.9	10.2	0.0	0.7	0.0	5.6	11.0	1.1	8.4	6.7	19.0
	Smooth	7.7	6.9	5.2	4.0	3.9	4.7	6.8	9.4	10.5	11.1	13.2	16.0
1955	Wolf	35.6	27.6	10.9	13.7	37.5	30.1	40.2	52.4	48.1	61.2	98.3	90.9
	Smooth	18.7	21.9	25.6	29.7	35.7	42.5	47.0	51.0	58.8	68.5	77.5	85.4
1956	Wolf	70.2	89.9	134.5	123.4	144.3	112.7	127.4	167.9	165.4	157.6	215.8	185.8
	Smooth	92.5	100.9	110.6	119.5	128.4	137.3	145.2	151.0	153.9	157.6	160.9	164.7
1957	Wolf	166.0	132.7	160.0	188.5	156.8	191.8	187.6	177.2	228.8	283.4	241.2	250.1
	Smooth	170.5	173.4	176.4	184.3	190.6	194.3	201.4	207.8	212.5	217.5	222.5	226.5
1958	Wolf	272.3	178.9	227.2	240.7	224.2	221.8	257.6	276.6	243.9	226.1	197.6	244.5
	Smooth	230.7	237.8	242.5	240.8	236.6	234.5	232.0	228.1	225.8	223.4	221.6	221.3
1959	Wolf	217.6	140.3	211.3	197.2	224.1	215.9	202.6	257.6	191.9	156.4	151.0	189.3
	Smooth	218.8	215.7	212.7	207.7	202.8	198.6	194.6	193.2	189.4	183.5	178.9	171.5
1960	Wolf	177.1	148.4	111.4	156.0	153.9	108.1	160.8	165.6	138.8	98.4	108.9	114.3
	Smooth	165.2	159.7	153.6	149.0	144.8	139.9	132.1	123.8	119.0	114.9	107.9	104.0
1961	Wolf	64.0	62.5	81.4	88.5	52.6	115.5	91.8	60.0	66.8	48.4	45.7	27.8
	Smooth	101.4	94.1	86.7	81.6	76.9	70.7	66.6	65.7	64.0	61.5	60.5	58.3
1962	Wolf	52.3	51.7	52.2	57.5	59.5	56.0	22.9	24.4	58.7	48.1	31.3	34.6
	Smooth	52.9	48.6	46.8	46.4	45.8	45.5	44.4	42.0	39.5	36.6	34.6	33.0
1963	Wolf	18.8	28.1	15.1	25.3	43.9	33.1	23.7	41.1	38.5	42.5	26.1	8.3
	Smooth	32.1	32.8	32.6	31.6	31.1	29.8	28.7	27.9	27.2	26.5	24.4	21.9
1964	Wolf	18.8	8.8	16.7	7.3	11.2	6.9	4.4	13.4	5.4	7.1	6.3	23.5
	Smooth	20.0	18.1	15.5	12.7	10.4	10.2	10.8	11.4	12.1	12.4	12.9	13.5
1965	Wolf	18.5	23.2	19.9	10.9	19.0	13.5	17.2	7.0	19.2	23.9	12.5	10.7
	Smooth	14.3	14.6	14.9	16.1	17.1	16.8	16.4	16.6	16.8	18.8	22.0	25.6
1966	Wolf	19.9	27.1	20.4	59.6	48.1	70.1	60.9	60.8	55.2	53.1	31.9	56.0
	Smooth	29.8	33.9	37.6	40.3	42.3	45.0	50.6	57.7	66.1	72.3	74.4	75.6
1967	Wolf	107.5	110.4	139.2	89.0	69.3	78.2	112.0	118.9	115.6	106.3	90.4	128.4
	Smooth	78.1	82.6	87.6	92.3	97.0	102.4	104.7	102.3	98.1	95.1	97.8	101.9

1948年至2014年之每月太陽黑子相對數及平均值
 Monthly and Smooth Relative Sunspot Numbers since 1948 to 2014

Year 年		Jan. 一月	Feb. 二月	Mar. 三月	Apr. 四月	May 五月	Jun. 六月	Jul. 七月	Aug. 八月	Sep. 九月	Oct. 十月	Nov. 十一月	Dec. 十二月
1968	Wolf	89.8	71.0	76.4	80.5	141.9	104.7	114.8	90.1	112.4	104.7	77.0	120.4
	Smooth	103.1	102.0	100.7	100.5	99.9	99.0	98.6	98.6	100.9	103.3	101.7	100.2
1969	Wolf	88.8	71.0	131.9	83.6	101.2	108.5	88.1	63.6	84.3	81.8	59.4	129.8
	Smooth	99.3	97.0	94.8	92.6	91.0	90.6	91.5	94.8	96.9	96.8	99.0	101.3
1970	Wolf	101.8	136.0	116.7	97.3	140.0	126.0	132.9	100.8	98.8	96.8	101.2	82.8
	Smooth	103.9	107.4	109.5	110.7	113.1	112.9	110.4	108.7	105.4	103.3	99.9	94.8
1971	Wolf	88.7	109.5	63.9	98.0	59.3	83.3	83.2	63.2	23.8	47.5	71.1	73.4
	Smooth	90.9	87.3	82.6	77.4	74.1	72.5	71.4	71.7	74.0	74.3	73.4	73.5
1972	Wolf	73.2	131.0	97.8	71.4	63.3	82.1	79.1	83.6	63.8	58.5	21.0	48.4
	Smooth	73.2	73.9	76.4	78.6	76.9	73.8	71.2	66.3	61.0	58.2	57.1	55.6
1973	Wolf	35.7	50.9	51.3	50.8	57.3	50.6	28.2	29.2	94.9	36.9	14.8	24.3
	Smooth	52.1	47.7	46.8	47.2	46.0	44.7	43.2	42.3	40.6	38.3	36.7	35.4
1974	Wolf	21.7	45.3	14.4	34.0	35.0	42.0	60.8	44.5	42.4	55.3	32.7	8.0
	Smooth	36.4	38.4	36.9	35.4	37.0	37.0	35.9	33.8	31.9	30.4	28.6	27.0
1975	Wolf	11.0	5.3	9.1	3.1	24.0	13.9	28.1	27.5	13.4	11.6	34.4	18.3
	Smooth	24.5	22.4	20.5	17.5	15.7	16.2	16.6	16.9	17.8	19.8	20.7	21.0
1976	Wolf	11.1	10.8	26.3	34.0	15.1	29.3	0.8	22.7	20.5	29.1	4.5	20.3
	Smooth	20.5	19.2	19.3	20.3	19.8	18.6	19.1	20.7	21.2	19.5	18.5	19.8
1977	Wolf	20.1	39.5	11.1	9.1	16.1	58.8	28.0	54.5	58.8	67.6	40.3	57.3
	Smooth	22.2	24.6	27.6	30.8	33.9	36.9	39.8	44.8	52.0	60.9	70.4	77.8
1978	Wolf	54.0	124.7	97.6	136.7	116.7	135.3	95.2	68.4	155.7	143.5	93.7	180.8
	Smooth	83.8	87.1	91.8	99.0	104.3	111.7	125.5	138.7	148.2	153.1	155.5	159.2
1979	Wolf	261.3	234.1	215.2	138.7	171.1	170.4	215.1	161.1	234.7	230.1	276.0	228.1
	Smooth	165.7	174.5	181.7	188.6	199.8	209.4	206.7	199.2	193.6	193.9	199.1	202.6
1980	Wolf	151.0	162.9	153.7	207.3	225.8	201.4	201.1	193.2	228.6	222.4	201.9	241.6
	Smooth	203.3	204.1	205.2	204.6	201.2	198.7	199.9	200.6	201.5	202.6	201.1	197.1
1981	Wolf	167.7	162.1	176.4	211.5	185.9	143.5	187.3	222.9	265.4	244.9	209.6	179.1
	Smooth	194.1	194.7	197.5	200.0	201.2	199.0	196.4	198.9	202.8	202.6	197.7	194.8
1982	Wolf	169.8	219.2	213.2	169.2	110.6	149.0	161.9	152.1	178.9	122.4	123.4	163.1
	Smooth	194.0	190.0	183.4	174.7	166.0	161.7	159.8	152.5	142.4	135.9	134.5	134.8
1983	Wolf	140.5	72.7	116.6	110.3	135.0	133.6	105.4	96.5	63.5	83.0	47.8	67.4
	Smooth	131.9	127.2	120.1	113.6	108.8	101.7	95.0	94.6	97.5	96.9	94.6	90.5
1984	Wolf	74.8	131.0	126.9	85.4	105.2	65.3	57.7	35.3	18.7	13.9	25.4	29.1
	Smooth	85.7	81.2	76.7	72.0	68.2	65.7	62.3	56.1	47.3	40.3	34.9	30.6
1985	Wolf	32.4	24.8	21.9	22.9	37.6	29.4	44.9	13.1	5.3	27.4	24.9	14.3
	Smooth	28.6	27.1	25.6	25.6	26.2	25.5	23.7	22.7	23.0	22.9	21.9	19.9
1986	Wolf	2.8	31.8	21.5	21.4	15.1	2.5	20.2	9.7	5.7	42.6	19.7	7.6
	Smooth	17.7	16.5	16.4	17.1	17.5	17.0	17.0	16.0	14.6	15.6	17.8	19.8
1987	Wolf	8.5	2.7	18.5	46.6	43.8	21.6	41.6	51.0	37.6	75.9	59.8	33.3
	Smooth	21.5	24.1	27.2	29.9	32.9	35.7	40.0	45.0	49.6	55.3	59.8	65.9

1948年至2014年之每月太陽黑子相對數及平均值
 Monthly and Smooth Relative Sunspot Numbers since 1948 to 2014

Year 年		Jan. 一月	Feb. 二月	Mar. 三月	Apr. 四月	May 五月	Jun. 六月	Jul. 七月	Aug. 八月	Sep. 九月	Oct. 十月	Nov. 十一月	Dec. 十二月
1988	Wolf	86.4	46.2	83.7	118.7	80.9	129.6	119.0	128.1	136.7	153.1	150.8	247.8
	Smooth	73.6	80.1	87.4	94.7	101.8	114.5	128.9	141.4	152.2	158.1	165.4	177.0
1989	Wolf	217.5	216.1	171.3	174.2	201.0	287.1	177.5	247.2	237.2	208.0	290.0	300.0
	Smooth	186.0	193.4	202.5	209.0	217.1	225.1	230.5	232.2	234.4	239.7	243.0	241.5
1990	Wolf	295.2	179.9	260.3	212.5	241.8	210.4	275.6	281.3	201.8	284.1	254.1	281.6
	Smooth	242.4	247.9	247.9	249.6	251.2	249.0	245.9	249.6	255.0	255.2	253.5	251.8
1991	Wolf	239.9	322.8	247.0	230.5	184.3	227.5	324.8	338.8	252.8	317.5	271.9	352.1
	Smooth	254.6	259.0	263.6	267.1	269.2	272.9	278.6	286.1	293.1	296.2	297.8	296.3
1992	Wolf	305.7	436.9	302.9	247.8	204.4	171.7	180.7	163.7	168.2	210.1	202.9	176.7
	Smooth	287.9	274.6	263.8	255.8	248.5	238.3	223.5	205.9	190.2	180.4	173.1	166.1
1993	Wolf	126.2	193.4	169.8	145.6	131.6	75.8	117.8	96.4	62.2	101.5	76.7	122.3
	Smooth	159.4	154.0	146.8	137.8	128.1	120.5	117.3	111.5	102.8	94.3	85.5	80.5
1994	Wolf	103.4	75.4	80.7	30.9	34.7	53.4	54.1	47.3	52.5	63.1	25.9	32.0
	Smooth	77.0	72.3	69.8	67.8	64.1	58.2	51.1	45.9	42.6	40.9	39.6	37.1
1995	Wolf	22.9	31.5	45.9	23.1	11.3	18.6	16.9	11.2	9.7	26.3	11.6	14.2
	Smooth	34.1	31.1	27.8	24.5	22.3	21.0	20.0	18.6	15.9	13.6	12.6	12.0
1996	Wolf	17.4	2.4	10.1	4.3	4.7	11.8	8.4	15.9	3.6	0.9	27.7	12.3
	Smooth	11.4	11.2	11.1	9.8	8.3	7.2	9.6	9.3	9.5	10.5	11.8	12.5
1997	Wolf	8.4	3.9	15.1	21.3	19.6	15.2	18.1	44.9	92.7	36.8	67.3	61.9
	Smooth	13.1	14.7	17.6	19.3	19.7	22.3	26.9	30.7	47.2	54.4	58.2	65.0
1998	Wolf	40.1	60.7	102.9	104.7	85.7	112.2	114.9	164.2	169.7	117.9	132.9	152.5
	Smooth	73.0	82.0	90.2	96.8	102.9	109.4	115.4	118.1	120.3	122.3	127.0	145.0
1999	Wolf	92.3	73.1	144.1	110.3	195.1	433.0	285.9	179.9	146.1	231.8	264.6	136.3
	Smooth	165.5	173.2	172.9	176.7	186.9	191.7	194.6	206.2	222.8	236.9	244.6	240.7
2000	Wolf	178.7	264.0	352.7	239.3	251.6	281.1	383.9	291.5	283.5	204.9	219.5	232.0
	Smooth	238.4	247.2	257.5	262.1	259.1	261.2	267.0	264.6	255.7	250.0	246.5	243.1
2001	Wolf	220.8	164.0	240.1	215.7	189.3	263.9	156.5	217.1	361.8	--	--	--
	Smooth	233.0	220.4	220.5	224.6	225.8	225.8	226.6	224.4	212.9	--	--	--
2002	Wolf	240.4	105.0	92.7	133.4	180.3	103.6	181.0	188.3	166.1	160.0	177.7	176.5
	Smooth	178.1	177.9	165.4	154.8	156.2	158.0	158.0	154.9	150.4	152.2	148.7	146.2
2003	Wolf	148.8	88.8	124.2	129.2	100.7	123.6	153.3	150.6	105.8	169.3	39.3	91.4
	Smooth	145.9	143.2	139.1	137.0	131.6	122.3	115.6	112.3	109.5	104.6	101.8	98.4
2004	Wolf	73.9	84.9	60.1	75.5	86.3	56.4	97.4	72.3	51.9	67.6	95.4	32.2
	Smooth	93.2	87.6	82.1	75.7	73.8	73.6	71.6	71.7	71.0	69.5	67.3	67.2
2005	Wolf	84.8	77.0	49.3	51.2	57.0	83.1	74.6	62.4	36.2	14.0	24.9	65.5
	Smooth	67.3	66.0	64.9	62.0	56.8	55.3	54.0	48.4	44.5	43.4	42.4	38.9
2006	Wolf	20.6	6.6	27.1	46.4	37.2	19.1	27.5	24.9	13.2	13.4	30.6	26.5
	Smooth	34.3	30.7	28.2	27.2	27.4	26.1	25.0	26.5	26.5	24.2	21.8	20.5
2007	Wolf	35.5	26.1	8.6	9.1	17.6	7.1	17.1	10.4	4.1	1.6	4.8	21.4
	Smooth	19.6	18.5	17.6	16.7	15.1	13.8	12.4	10.1	9.5	9.6	8.8	8.4

1948年至2014年之每月太陽黑子相對數及平均值
 Monthly and Smooth Relative Sunspot Numbers since 1948 to 2014

Year 年		Jan. 一月	Feb. 二月	Mar. 三月	Apr. 四月	May 五月	Jun. 六月	Jul. 七月	Aug. 八月	Sep. 九月	Oct. 十月	Nov. 十一月	Dec. 十二月
2008	Wolf	6.9	0.0	18.0	2.1	7.3	5.9	0.5	0.0	1.4	3.4	5.7	0.7
	Smooth	7.6	6.5	5.9	5.9	6.0	5.2	4.1	4.0	3.4	2.8	2.7	2.7
2009	Wolf	1.7	3.0	0.8	4.0	4.4	7.1	10.5	0.0	4.4	17.6	3.3	19.2
	Smooth	3.1	3.6	3.7	4.4	4.9	5.5	7.3	9.9	12.8	14.1	14.6	15.2
2010	Wolf	24.4	42.9	30.5	5.3	15.5	10.0	27.0	24.6	32.7	31.3	33.1	26.3
	Smooth	16.0	17.7	19.9	21.6	23.5	25.0	26.0	26.7	29.6	36.1	42.6	47.2
2011	Wolf	40.3	45.5	95.9	97.6	78.4	57.8	70.3	80.7	131.3	144.4	132.9	152.5
	Smooth	51.0	55.1	61.6	70.4	79.3	88.7	96.3	98.5	97.4	95.3	93.8	94.7
2012	Wolf	97.7	40.7	73.6	69.8	70.5	86.6	78.7	64.3	86.9	64.1	80.7	57.0
	Smooth	96.3	95.9	93.4	88.2	82.7	76.5	71.6	70.7	70.7	71.0	72.2	72.5
2013	Wolf	74.2	43.2	70.3	81.0	88.2	76.7	68.4	66.2	38.6	99.4	83.0	88.8
	Smooth	71.7	71.3	69.4	68.8	70.4	71.8	74.2	78.0	82.2	84.9	86.1	86.7
2014	Wolf	100.4	107.6	106.5	109.6	87.3	92.7	103.9	90.0	101.2	77.8	76.9	96.5
	Smooth	88.8	91.3	94.9	96.6	95.5	95.5						

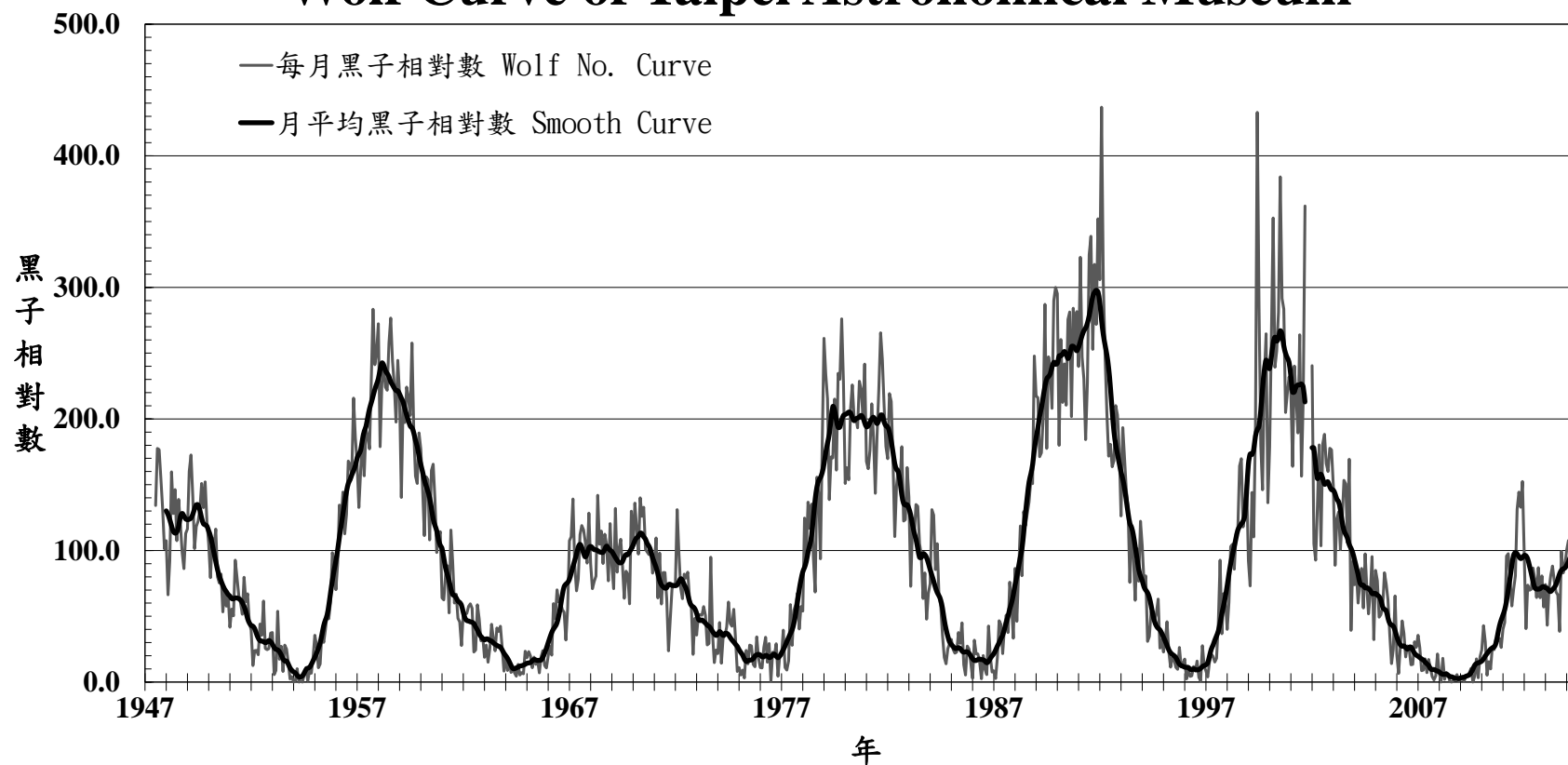
註：

* 2001年9月中旬至12月底，因望遠鏡故障，無法觀測。故暫時設定2001年9月之相對數月平均值資料以現有的觀測資料計算，逢2001年10月~12月者則跳過不計這三個月份。總計有2001年4月~2002年6月的月平滑值會受到影響。

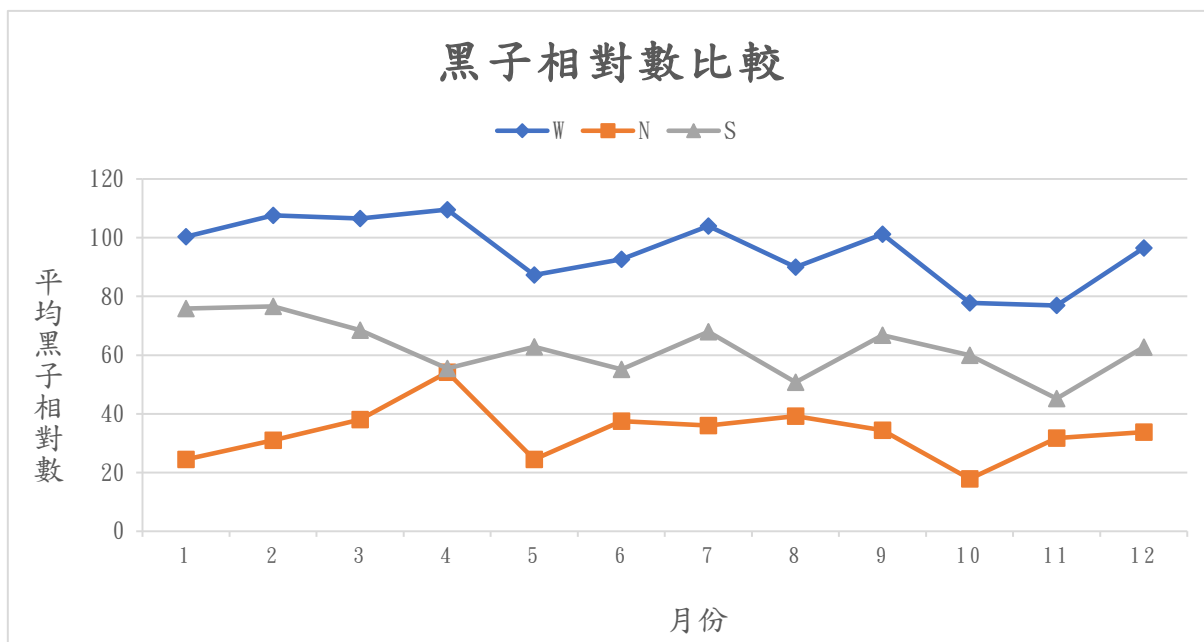
* 2005年6月10~25日，因觀測室進行圓頂工程無法觀測，影響觀測天數及黑子觀測值。

臺北市立天文科學教育館太陽黑子相對數變化圖

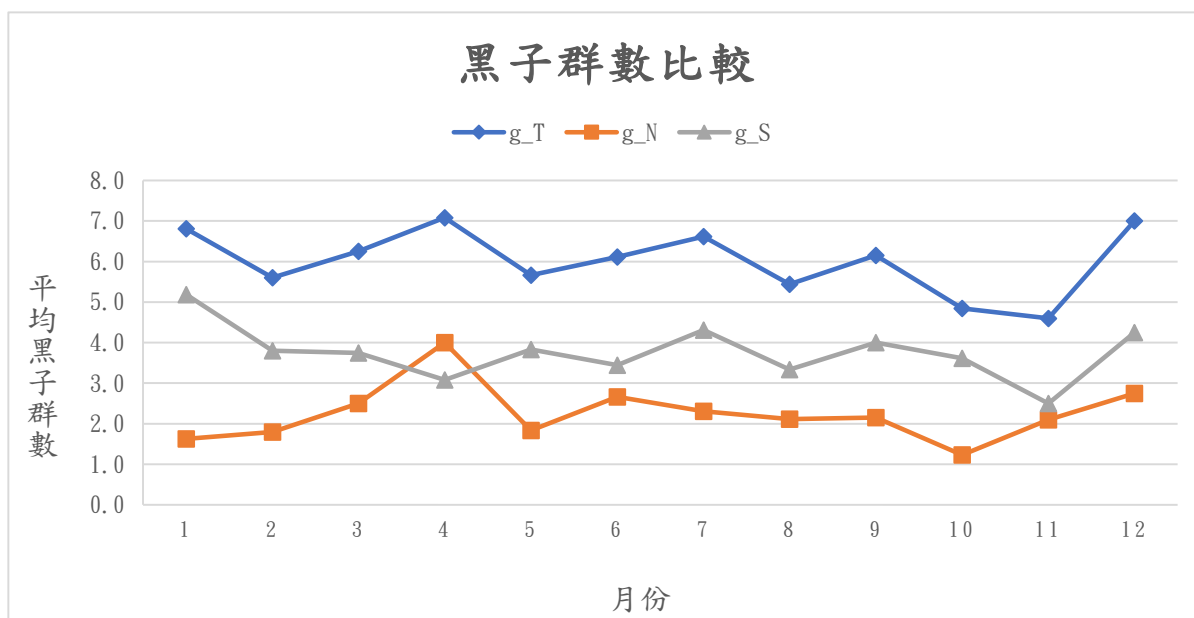
Wolf Curve of Taipei Astronomical Museum



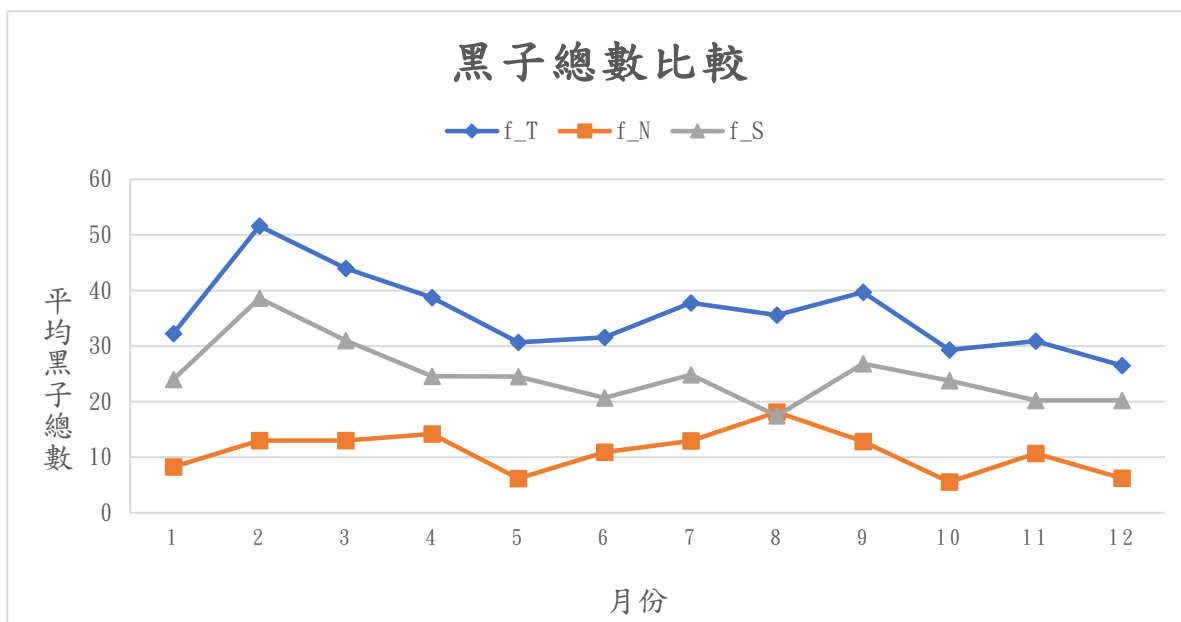
本圖為臺北天文館自1947年7月至2014年12月的每月黑子相對數（灰色細線）與月平均黑子相對數（黑色粗線）曲線圖。兩曲線均尚未做K值的修正。



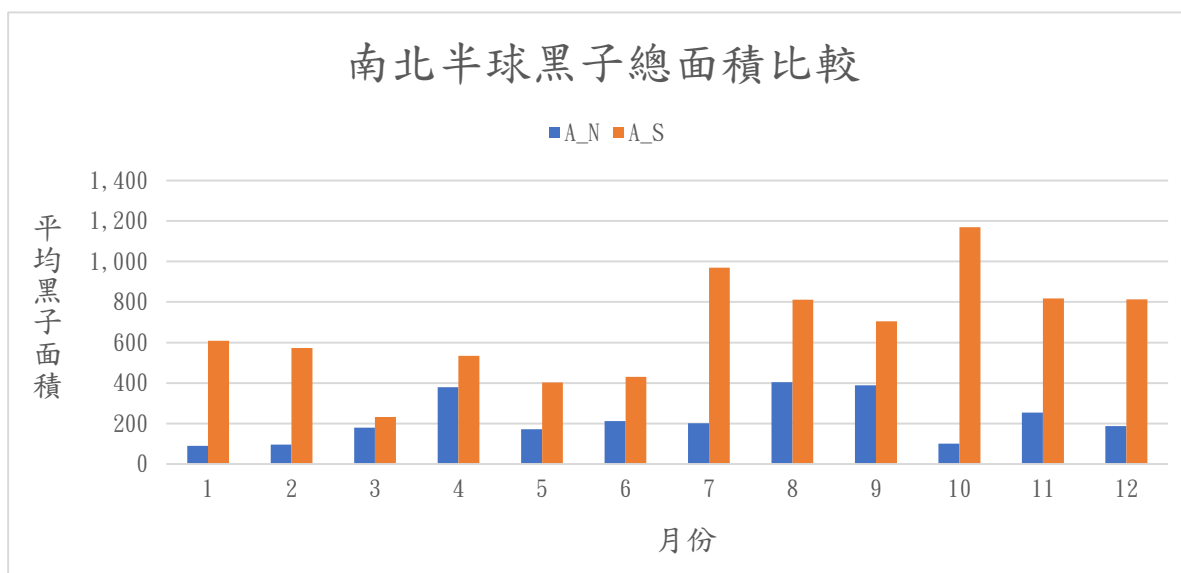
本圖為2014年各月的平均黑子相對數變化圖，其中W代表整個太陽可見半球面的黑子相對數，N與S則分別代表可見半球面中之北半球與南半球的黑子相對數。



本圖為2014年各月的平均黑子群數變化圖，其中g_T代表整個太陽可見半球面的黑子群數，g_N與g_S則分別代表可見半球面中之北半球與南半球的黑子群數。



本圖為2014年各月的平均黑子總數變化圖，其中f_T代表整個太陽可見半球面的黑子總數，f_N與f_S則分別代表可見半球面中之北半球與南半球的黑子總數。



本圖為2014年各月的南北半球黑子總面積變化圖，其中A_N與A_S分別代表可見半球面中之北半球與南半球的黑子總面積。面積以「太陽半球面總面積的百萬分之一」為單位，此為太陽投影觀測的慣用單位。

太陽黑子觀測設備沿革

The Historical Telescopes Using For Sunspot Observations

臺北天文館蒐集的太陽黑子觀測記錄資料始於民國 36 年 7 月，各時段所使用的觀測設備如下表所示。其中民國 36 年到民國 64 年所使用的儀器仍待考證。

The Taipei Astronomical Museum has been collecting sunspot observation records since July, 1947. The telescopes used during different periods is shown in the table below. The instruments used from 1947 to 1975 are still under investigation.

日期 DATE	儀器廠牌與型式 Telescope	有效口徑 Effective Aperture	目鏡焦距 Eyepieces Focal Length	焦比 Focal Ratio	倍率 Mag.	投影直徑 Projective diameter
1947.07~1975.	10.0cm refractor	10.0cm				
1975. ~1989.11	GOTO 12.5cm refractor	12.5cm	25mm	15.0	72	10cm
1989.12~1991.02	GOTO 25.0cm refractor	25.0cm	60mm	15.0	63	20cm
1991.03~1991.06	GOTO 12.5cm refractor	12.5cm	25mm	15.0	72	10cm
1991.07~1994.12	GOTO 25.0cm refractor	25.0cm	60mm	15.0	63	20cm
1995.01~1996.11	Showa 15.0cm refractor	12.5cm	25mm	14.4	72	10cm
1996.12~1997.01	Showa 15.0cm refractor GOTO 20.0cm refractor	mixing	mixing	mixing	mixing	mixing
1997.02~now	GOTO 20.0cm refractor	20.0cm	28mm	9.0	64	20cm

太陽黑子觀測報告—中華民國 103 年

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