

# *Georgi Dobrovolski Solar Observatory*

## *Sunspot Region Co-ordinates and Classifications for 2016*

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# Georgi Dobrovolski Solar Observatory



## REGION CO-ORDINATES AND CLASSIFICATIONS FOR JANUARY 2016

All observations carried out by HOWARD BARNES .

Telescope : 76 mm refractor ( f.l. 910 mm ) .

Observed by PROJECTION . Full disc diameter = 145 mm approx .

CM = Central Meridian longitude, stated in degrees .

REG. = NOAA/SWPC Region Numbers .

B = Heliographic Latitude ( + if NORTH , - if SOUTH ) .

CMD = Degrees of Longitude in respect to the Central Meridian ( - if EAST, + if WEST) .

L = Carrington Longitude .

Stated times (UT) approximate Co-ordinated Universal Time / Temps Universel Coordonné (UTC).

OBS	DATE	UT	CM	REG.	B	CMD	L	f	p	s	gr	grfp	grf	efp	ef	Class.	Remarks
5827	2016 / 01 / 05	1930	210.9	2477	+12	-22	189	1	1	0	0	0	0	1	0	HSX	—
				2476	-10	-09	202	1	0	1	0	0	0	0	0	1	AXX
5828	2016 / 01 / 12	2020	118.3	2480	+03	+05	123	1	1	0	0	0	0	1	0	HHX	—
				2483	+17	+06	124	8	2	5	1	3	5	0	0	DAI	—
5829	2016 / 01 / 15	2015	78.8	2485	+13	-48	031	2	1	1	1	1	1	0	0	CSO	—
				2483	+17	+47	126	4	1	2	1	2	2	0	0	CAI	—
				2480	+04	+50	129	1	1	0	0	0	0	0	1	0	HHX
5830	2016 / 01 / 18	2010	39.3	2486	-20	-55	344	1	1	0	0	0	0	1	0	HSX	—
5831	2016 / 01 / 20	2035	12.8	2488	+04	-56	317	1	1	0	0	0	0	1	0	HSX	—
				2487	-13	-39	334	5	2	2	1	3	2	0	0	DAI	—
				2486	-20	-35	338	1	1	0	0	0	0	0	1	0	HSX
5832	2016 / 01 / 22	2025	346.5	2488	+04	-30	317	7	1	6	1	1	6	0	0	CSI	—
				2487	-13	-14	333	5	2	2	1	3	2	0	0	DAI	—
				2486	-21	-08	339	1	1	0	0	0	0	0	1	0	HSX
5833	2016 / 01 / 23	2015	333.5	2488	+03	-14	319	8	2	3	1	5	3	0	0	DAI	tight
				2487	-12	+03	336	3	1	2	1	1	2	0	0	CSI	—
5834	2016 / 01 / 25	2000	307.3	2489	+09	-56	251	2	1	1	1	1	1	0	0	CSO	—
				2488	+02	+13	320	8	2	3	1	5	3	0	0	DAI	—
				2487	-12	+32	339	1	0	1	0	0	0	0	0	1	AXX
5835	2016 / 01 / 30	2010	241.3	2489	+10	+12	253	5	1	3	1	2	3	0	0	CHI	—
				2488	+04	+81	322	1	1	0	0	0	0	0	1	0	HSX

# Georgi Dobrovolski Solar Observatory



## REGION CO-ORDINATES AND CLASSIFICATIONS FOR FEBRUARY 2016

All observations carried out by HOWARD BARNES .

Telescope : 76 mm refractor ( f. l. 910 mm ) .

Observed by PROJECTION . Full disc diameter = 145 mm approx .

CM = Central Meridian longitude, stated in degrees .

REG. = NOAA/SWPC Region Numbers .

B = Heliographic Latitude ( + if NORTH , - if SOUTH ) .

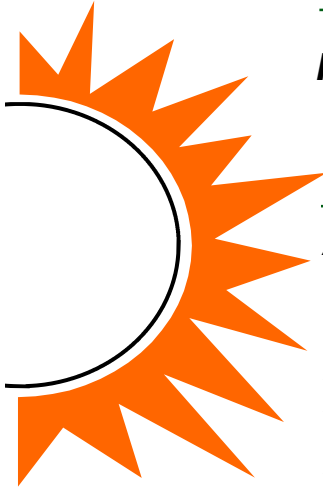
CMD = Degrees of Longitude in respect to the Central Meridian ( - if EAST , + if WEST ) .

L = Carrington Longitude .

Stated times (UT) approximate Co-ordinated Universal Time / Temps Universel Coordonné (UTC).

OBS	DATE	UT	CM	REG.	B	CMD	L	f	p	s	gr	grfp	grf	efp	ef	Class.	Remarks
5836	2016 / 02 / 11	2030	83.2	—	-17	-20	063	1	0	1	0	0	0	0	1	AXX	—
				2497	+13	+04	087	22	5	12	1	10	12	0	0	FAC	—
5837	2016 / 02 / 13	2015	57.0	2497	+12	+32	089	19	5	10	1	9	10	0	0	FAC	—
5838	2016 / 02 / 18	2055	350.8	2501	+05	-22	329	2	1	1	1	1	1	0	0	CSO	—
				2502	+09	+26	017	1	0	1	0	0	0	0	1	AXX	big
5839	2016 / 02 / 19	2025	337.9	2501	+04	-11	327	1	1	0	0	0	0	1	0	HSX	—
				2504	+12	+00	338	3	1	2	1	1	2	0	0	CSI	—
				2505	+08	+19	357	4	1	3	1	1	3	0	0	CSI	—
5840	2016 / 02 / 20	2035	324.6	2501	+04	+02	327	3	1	2	1	1	2	0	0	CSI	—
				2504	+12	+15	340	2	1	1	1	1	1	0	0	CSO	tight
				2505	+08	+30	355	12	3	5	1	7	5	0	0	EAC	short
5841	2016 / 02 / 22	2110	297.9	2501	+04	+30	328	1	1	0	0	0	0	1	0	HSX	—
				2504	+13	+42	340	1	0	1	0	0	0	0	1	AXX	small
				2505	+08	+57	355	11	3	5	1	6	5	0	0	EAC	short
5842	2016 / 02 / 24	2040	271.9	2501	+05	+58	330	1	1	0	0	0	0	1	0	HSX	—
5843	2016 / 02 / 25	2100	258.5	2506	-07	-37	222	3	1	2	1	1	2	0	0	CSI	small
				—	-25	-15	244	2	0	2	1	0	2	0	0	BXO	—
				2501	+04	+71	330	1	1	0	0	0	0	0	1	0	HSX

# Georgi Dobrovolski Solar Observatory



## REGION CO-ORDINATES AND CLASSIFICATIONS FOR MARCH 2016

All observations carried out by HOWARD BARNES .

Telescope : 76 mm refractor ( f.l. 910 mm ) .

Observed by PROJECTION . Full disc diameter = 145 mm approx .

CM = Central Meridian longitude, stated in degrees .

REG. = NOAA/SWPC Region Numbers .

B = Heliographic Latitude ( + if NORTH , - if SOUTH ) .

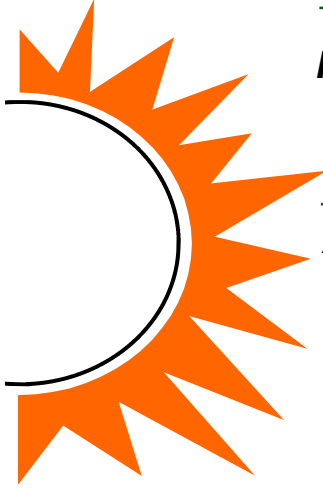
CMD = Degrees of Longitude in respect to the Central Meridian ( - if EAST, + if WEST) .

L = Carrington Longitude .

Stated times (UT) approximate Co-ordinated Universal Time / Temps Universel Coordonné (UTC).

OBS	DATE	UT	CM	REG.	B	CMD	L	f	p	s	gr	grfp	grf	efp	ef	Class.	Remarks
5844	2016 / 03 / 02	2035	179.7	2510	+05	-53	127	3	1	2	1	1	2	0	0	CSI	—
				2512	+11	-30	150	3	1	1	1	2	1	0	0	CAO	—
				2506	-07	+46	226	8	2	6	1	2	6	0	0	DSI	—
5845	2016 / 03 / 03	2140	166.0	2513	+11	-70	096	1	1	0	0	0	0	1	0	HSX	—
				2510	+05	-42	124	4	1	3	1	1	3	0	0	CSI	—
				2512	+12	-14	152	5	2	3	1	2	3	0	0	DSI	—
				2506	-07	+59	225	1	1	0	0	0	0	1	0	HSX	—
5846	2016 / 03 / 04	2035	153.4	2513	+12	-50	103	1	1	0	0	0	0	1	0	HSX	—
				2510	+05	-31	122	4	2	2	1	2	2	0	0	DSI	—
				2514	+14	+10	163	7	3	3	1	4	3	0	0	EAC	small, short
				2506	-06	+75	228	1	1	0	0	0	0	1	0	HSX	—
5847	2016 / 03 / 05	2140	139.6	2513	+12	-38	102	1	1	0	0	0	0	1	0	HSX	—
				2510	+05	-20	120	3	1	2	1	1	2	0	0	CSI	—
				2512	+11	+14	154	1	0	1	0	0	0	0	1	AXX	resighted
				2514	+14	+24	164	4	1	2	1	2	2	0	0	CAI	—
5848	2016 / 03 / 08	2110	100.3	2513	+10	+02	102	1	1	0	0	0	0	1	0	HSX	—
				2510	+07	+22	122	4	1	3	1	1	3	0	0	CSI	—
				2512	+10	+55	155	3	1	2	1	1	2	0	0	CSI	—
5849	2016 / 03 / 12	2145	47.3	2519	+05	-40	007	1	1	0	0	0	0	1	0	HSX	—
				2521	+19	-19	028	6	1	3	1	3	3	0	0	CAI	—
				2513	+10	+56	103	1	1	0	0	0	0	1	0	HSX	—
5850	2016 / 03 / 13	2045	34.7	2519	+05	-28	007	2	1	1	1	1	1	0	0	CSO	—
				2521	+20	-06	029	8	2	3	1	5	3	0	0	DAI	—
				2513	+09	+70	105	1	1	0	0	0	0	1	0	HSX	—
5851	2016 / 03 / 14	2150	20.9	2519	+05	-09	012	2	1	1	1	1	1	0	0	CSO	—
				2521	+19	+08	029	9	2	5	1	4	5	0	0	DAI	—
				2522	+14	+55	076	3	1	2	1	1	2	0	0	CSI	—
5852	2016 / 03 / 18	2155	328.1	2524	+15	-50	278	7	2	2	1	5	2	0	0	EAI	—
				2519	+04	+47	015	1	1	0	0	0	0	1	0	HSX	—
5853	2016 / 03 / 28	2110	196.7	2526	-04	-20	177	4	1	3	1	1	3	0	0	CHI	—

# Georgi Dobrovolski Solar Observatory



## REGION CO-ORDINATES AND CLASSIFICATIONS FOR APRIL 2016

All observations carried out by HOWARD BARNES .

Telescope : 76 mm refractor ( f. l. 910 mm ) .

Observed by PROJECTION . Full disc diameter = 145 mm approx .

CM = Central Meridian longitude, stated in degrees .

REG. = NOAA/SWPC Region Numbers .

B = Heliographic Latitude ( + if NORTH , - if SOUTH ) .

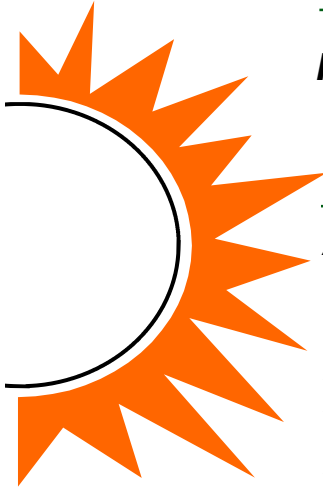
CMD = Degrees of Longitude in respect to the Central Meridian ( - if EAST , + if WEST ) .

L = Carrington Longitude .

Stated times (UT) approximate Co-ordinated Universal Time / Temps Universel Coordonné (UTC).

OBS	DATE	UT	CM	REG.	B	CMD	L	f	p	s	gr	grfp	grf	efp	ef	Class.	Remarks
5854	2016 / 04 / 04	2200	103.9	2528	+07	+08	112	4	2	2	1	2	2	0	0	DSI	—
				2526	-03	+75	179	1	1	0	0	0	0	1	0	HHX	—
5855	2016 / 04 / 05	2205	90.6	2528	+07	+22	113	6	2	3	1	3	3	0	0	DAI	—
5856	2016 / 04 / 06	2200	77.5	2528	+07	+36	113	4	1	3	1	1	3	0	0	CSI	—
5857	2016 / 04 / 07	2155	64.3	2529	+10	-78	346	1	1	0	0	0	0	1	0	HHX	big
				2528	+07	+50	114	2	1	1	1	1	1	0	0	CSO	small
5858	2016 / 04 / 11	2210	11.4	2529	+09	-29	342	11	2	6	1	5	6	0	0	EKI	—
				2530	+15	+10	021	1	1	0	0	0	0	1	0	HSX	—
5859	2016 / 04 / 13	2220	344.9	2529	+09	-01	344	7	2	4	1	3	4	0	0	EHI	enormous penumbra
				2530	+15	+38	023	1	1	0	0	0	0	1	0	HSX	—
5860	2016 / 04 / 14	2225	331.7	2529	+10	+12	344	9	2	6	1	3	6	0	0	EHI	penumbral Ø c. 55 000 km
5861	2016 / 04 / 17	2210	292.2	2532	+07	-54	238	1	1	0	0	0	0	1	0	HSX	—
				2529	+10	+50	342	8	2	4	1	4	4	0	0	EKI	—
5862	2016 / 04 / 20	2220	252.5	2533	-02	-68	184	1	1	0	0	0	0	1	0	HSX	—
				2532	+06	-13	239	2	1	1	1	1	1	0	0	CSO	—
5863	2016 / 04 / 21	2205	239.4	2533	-02	-55	184	1	1	0	0	0	0	1	0	HSX	—
				2532	+06	-00	239	2	0	2	1	0	2	0	0	BXO	—
5864	2016 / 04 / 22	2215	226.1	2533	-02	-44	182	1	1	0	0	0	0	1	0	HSX	—
5865	2016 / 04 / 26	2230	173.1	2536	+15	-56	117	4	1	2	1	2	2	0	0	CAI	—
				2535	+06	-46	127	2	1	1	1	1	1	0	0	CSO	—
				2533	-02	+09	182	1	1	0	0	0	0	1	0	HSX	—

# Georgi Dobrovolski Solar Observatory



## REGION CO-ORDINATES AND CLASSIFICATIONS FOR MAY 2016

All observations carried out by HOWARD BARNES .

Telescope : 76 mm refractor ( f.l. 910 mm ) .

Observed by PROJECTION . Full disc diameter = 145 mm approx .

CM = Central Meridian longitude, stated in degrees .

REG. = NOAA/SWPC Region Numbers .

B = Heliographic Latitude ( + if NORTH , - if SOUTH ) .

CMD = Degrees of Longitude in respect to the Central Meridian ( - if EAST, + if WEST) .

L = Carrington Longitude .

Stated times (UT) approximate Co-ordinated Universal Time / Temps Universel Coordonné (UTC).

OBS	DATE	UT	CM	REG.	B	CMD	L	f	p	s	gr	grfp	grf	efp	ef	Class.	Remarks
5866	2016 / 05 / 02	2215	93.9	2539	+16	-08	086	6	2	3	1	3	3	0	0	DAI	—
				2536	+16	+25	119	7	2	3	1	4	3	0	0	DAI	—
				2535	+07	+41	135	1	1	0	0	0	0	1	0	HSX	—
5867	2016 / 05 / 06	2250	40.8	2542	+10	-44	357	5	1	3	1	2	3	0	0	CSI	—
				2536	+15	+76	117	1	0	1	0	0	0	0	1	AXX	—
5868	2016 / 05 / 08	2240	14.4	2542	+12	-16	358	6	1	3	1	3	3	0	0	CAI	—
				2543	-06	-12	002	2	1	1	1	1	1	0	0	CSO	small
5869	2016 / 05 / 13	2220	308.5	2544	+21	-11	297	7	3	4	1	3	4	0	0	DSI	—
				2545	-21	+35	343	5	2	2	1	3	2	0	0	DAI	—
				2542	+10	+50	358	12	3	5	1	7	5	0	0	DAC	—
				2543	-05	+54	002	4	2	2	1	2	2	0	0	DSI	—
5870	2016 / 05 / 14	2245	295.0	2546	-07	-72	223	1	1	0	0	0	0	1	0	HHX	—
				2544	+21	-01	294	15	2	12	1	3	12	0	0	DAI	—
				2545	-21	+48	343	4	2	2	1	2	2	0	0	DSI	—
				2542	+10	+63	358	3	1	2	1	1	2	0	0	CSI	—
				2543	-05	+68	003	2	1	1	1	1	1	0	0	CSO	—
5871	2016 / 05 / 19	2225	229.1	2546	-07	-08	221	3	1	2	1	1	2	0	0	CHI	—
				2544	+22	+69	298	2	1	1	1	1	1	0	0	CSO	—
5872	2016 / 05 / 25	2240	149.5	2548	+13	+21	171	11	2	5	1	6	5	0	0	DAI	—
				2546	-07	+74	224	1	1	0	0	0	0	1	0	HHX	—

# Georgi Dobrovolski Solar Observatory



## REGION CO-ORDINATES AND CLASSIFICATIONS FOR JUNE 2016

All observations carried out by HOWARD BARNES .

Telescope : 76 mm refractor ( f. l. 910 mm ) .

Observed by PROJECTION . Full disc diameter = 145 mm approx .

CM = Central Meridian longitude, stated in degrees .

REG. = NOAA/SWPC Region Numbers .

B = Heliographic Latitude ( + if NORTH , - if SOUTH ) .

CMD = Degrees of Longitude in respect to the Central Meridian ( - if EAST, + if WEST) .

L = Carrington Longitude .

Stated times (UT) approximate Co-ordinated Universal Time / Temps Universel Coordonné (UTC).

OBS	DATE	UT	CM	REG.	B	CMD	L	f	p	s	gr	grfp	grf	efp	ef	Class.	Remarks
5873	2016 / 06 / 01	2245	56.9	2551	+04	+70	127	1	1	0	0	0	0	1	0	HSX	—
5874	2016 / 06 / 03	2300	43.5	—	—	—	—	0	0	0	0	0	0	0	0	—	—
5875	2016 / 06 / 10	2230	297.9	2553	-06	-72	226	1	1	0	0	0	0	1	0	HHX	—
				2552	+14	+61	359	8	1	5	1	3	5	0	0	CAI	—
5876	2016 / 06 / 12	2225	271.5	2553	-06	-43	228	1	1	0	0	0	0	1	0	HHX	—
				2554	+08	+45	316	7	2	3	1	4	3	0	0	DAI	—
5877	2016 / 06 / 19	2310	178.4	2556	+06	-43	135	1	1	0	0	0	0	1	0	HSX	—
				2558	+13	+37	215	3	1	2	1	1	2	0	0	CSI	—
				2553	-07	+49	227	1	1	0	0	0	0	1	0	HHX	—
5878	2016 / 06 / 23	2300	125.5	—	—	—	—	0	0	0	0	0	0	0	0	—	—
5879	2016 / 06 / 30	2245	33.0	—	—	—	—	0	0	0	0	0	0	0	0	—	—

# Georgi Dobrovolski Solar Observatory



## REGION CO-ORDINATES AND CLASSIFICATIONS FOR JULY 2016

All observations carried out by HOWARD BARNES .

Telescope : 76 mm refractor ( f.l. 910 mm ) .

Observed by PROJECTION . Full disc diameter = 145 mm approx .

CM = Central Meridian longitude, stated in degrees .

REG. = NOAA/SWPC Region Numbers .

B = Heliographic Latitude ( + if NORTH , - if SOUTH ) .

CMD = Degrees of Longitude in respect to the Central Meridian ( - if EAST, + if WEST) .

L = Carrington Longitude .

Stated times (UT) approximate Co-ordinated Universal Time / Temps Universel Coordonné (UTC).

OBS	DATE	UT	CM	REG.	B	CMD	L	f	p	s	gr	grfp	grf	efp	ef	Class.	Remarks	
5880	2016 / 07 / 01	2310	19.6	—	—	—	—	0	0	0	0	0	0	0	0	—	—	
5881	2016 / 07 / 02	2300	6.4	—	—	—	—	0	0	0	0	0	0	0	0	—	—	
5882	2016 / 07 / 03	2305	353.1	—	—	—	—	0	0	0	0	0	0	0	0	—	—	
5883	2016 / 07 / 05	2305	326.7	—	—	—	—	0	0	0	0	0	0	0	0	—	—	
5884	2016 / 07 / 11	2255	247.3	2565	+04	-72	175	1	1	0	0	0	0	1	0	HSX	big	
				2564	+09	-40	207	6	1	3	1	3	3	0	0	CAI	—	
				2562	-06	-21	226	1	0	1	0	0	0	0	0	1	AXX	—
				2563	+19	-20	227	5	2	3	1	2	3	0	0	DSI	—	
5885	2016 / 07 / 13	2300	220.8	2565	+04	-45	176	3	1	1	1	2	1	0	0	CKO	—	
				2564	+09	-11	210	1	0	1	0	0	0	0	1	AXX	—	
5886	2016 / 07 / 15	2235	194.6	2568	-15	-40	155	2	0	2	1	0	2	0	0	BXO	—	
				2565/7	+05	-24	171	23	4	11	1	12	11	0	0	FKC	—	
				2564	+09	+15	210	1	0	1	0	0	0	0	1	AXX	small	
				—	+20	+20	215	1	0	1	0	0	0	0	1	AXX	small	
5887	2016 / 07 / 18	2255	154.7	2569	+17	-29	126	5	2	3	1	2	3	0	0	DSI	—	
				2565/7	+05	+15	170	27	5	10	1	17	10	0	0	FKC	—	
5888	2016 / 07 / 24	2250	75.5	—	—	—	—	0	0	0	0	0	0	0	0	—	—	



# Georgi Dobrovolski Solar Observatory



## REGION CO-ORDINATES AND CLASSIFICATIONS FOR AUGUST 2016

All observations carried out by HOWARD BARNES .

Telescope : 76 mm refractor ( f. l. 910 mm ) .

Observed by PROJECTION . Full disc diameter = 145 mm approx .

CM = Central Meridian longitude, stated in degrees .

REG. = NOAA/SWPC Region Numbers .

B = Heliographic Latitude ( + if NORTH , - if SOUTH ) .

CMD = Degrees of Longitude in respect to the Central Meridian ( - if EAST , + if WEST ) .

L = Carrington Longitude .

Stated times (UT) approximate Co-ordinated Universal Time / Temps Universel Coordonné (UTC).

OBS	DATE	UT	CM	REG.	B	CMD	L	f	p	s	gr	grfp	grf	efp	ef	Class.	Remarks
5889	2016 / 08 / 06	2330	263.1	2571	+12	+03	266	11	4	5	1	6	5	0	0	DAC	—
				2572	+13	+58	321	6	2	2	1	4	2	0	0	DAI	long
5890	2016 / 08 / 07	2320	249.9	2574	+08	-72	178	1	1	0	0	0	0	1	0	HSX	—
				2573	+04	-71	179	2	1	1	1	1	1	0	0	CSO	—
				2571	+12	+18	268	16	3	5	1	11	5	0	0	DAC	—
				2572	+13	+72	322	4	2	2	1	2	2	0	0	DSI	—
5891	2016 / 08 / 15	2215	144.8	2578	+08	-62	083	2	0	2	1	0	2	0	0	BXO	—
				2576	-12	+16	161	5	1	3	1	2	3	0	0	CAI	—
				2577	+04	+20	165	6	2	3	1	3	3	0	0	DAI	—
				2575	+14	+26	171	3	1	1	1	2	1	0	0	CAO	—
				2574	+05	+29	174	1	1	0	0	0	0	1	0	HSX	—
5892	2016 / 08 / 16	2210	131.6	2578	+08	-50	082	1	0	1	0	0	0	0	1	AXX	small
				2576	-12	+28	160	5	1	2	1	3	2	0	0	CAI	—
				2577	+04	+33	165	3	1	2	1	1	2	0	0	CSI	small
				2575	+14	+39	171	2	1	1	1	1	1	0	0	CSO	—
				2574	+05	+42	174	1	1	0	0	0	0	1	0	HSX	—
5893	2016 / 08 / 17	2205	118.4	2578	+09	-34	084	1	0	1	0	0	0	0	1	AXX	small
				2576	-12	+42	160	4	1	1	1	3	1	0	0	CAO	—
				2575	+14	+53	171	1	1	0	0	0	0	1	0	HSX	—
				2574	+05	+56	174	1	1	0	0	0	0	1	0	HSX	—
5894	2016 / 08 / 18	2255	104.8	2578	+09	-21	084	1	1	0	0	0	0	1	0	HSX	—
				2576	-12	+55	160	2	1	1	1	1	1	0	0	CSO	small
				2575	+14	+69	174	1	1	0	0	0	0	1	0	HSX	small
				2574	+06	+70	175	1	1	0	0	0	0	1	0	HSX	—



# Georgi Dobrovolski Solar Observatory

## REGION CO-ORDINATES AND CLASSIFICATIONS FOR AUGUST 2016 *continued.*

<i>OBS</i>	<i>DATE</i>	<i>UT</i>	<i>CM</i>	<i>REG.</i>	<i>B</i>	<i>CMD</i>	<i>L</i>	<i>f</i>	<i>p</i>	<i>s</i>	<i>gr</i>	<i>grfp</i>	<i>grf</i>	<i>efp</i>	<i>ef</i>	<i>Class.</i>	<i>Remarks</i>
5895	2016 / 08 / 20	2210	78.7	—	—	—	—	0	0	0	0	0	0	0	0	—	—
5896	2016 / 08 / 22	2210	52.3	2580	-16	-61	351	1	1	0	0	0	0	1	0	HSX	—
				2579	+12	-18	034	14	4	5	1	9	5	0	0	DAC	—
5897	2016 / 08 / 30	2155	306.8	2584	-06	-77	230	2	1	0	1	2	0	0	0	HAX	—
				2581	+11	+33	340	2	1	1	1	1	1	0	0	CSO	—
				2583	+14	+79	026	3	1	2	1	1	2	0	0	CSI	—

# Georgi Dobrovolski Solar Observatory



## REGION CO-ORDINATES AND CLASSIFICATIONS FOR SEPTEMBER 2016

All observations carried out by HOWARD BARNES .

Telescope : 76 mm refractor ( f. l. 910 mm ) .

Observed by PROJECTION . Full disc diameter = 145 mm approx .

CM = Central Meridian longitude, stated in degrees .

REG. = NOAA/SWPC Region Numbers .

B = Heliographic Latitude ( + if NORTH , - if SOUTH ) .

CMD = Degrees of Longitude in respect to the Central Meridian ( - if EAST, + if WEST) .

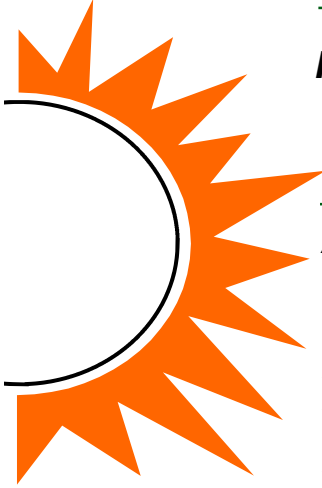
L = Carrington Longitude .

Stated times (UT) approximate Co-ordinated Universal Time / Temps Universel Coordonné (UTC).

OBS	DATE	UT	CM	REG.	B	CMD	L	f	p	s	gr	grfp	grf	efp	ef	Class.	Remarks
5898	2016 / 09 / 08	2150	187.9	2588	+12	+18	206	1	1	0	0	0	0	1	0	HSX	small
				2585	+08	+36	224	16	2	3	1	13	3	0	0	EKO	long
5899	2016 / 09 / 09	2200	174.6	2589	+15	+00	175	6	2	3	1	3	3	0	0	DAI	small
				2588	+13	+32	207	1	0	1	0	0	0	0	1	AXX	—
				2585	+09	+49	224	13	2	2	1	11	2	0	0	EKO	—
5900	2016 / 09 / 10	2205	161.4	2591	+05	-19	142	6	2	3	1	3	3	0	0	DAI	—
				2589	+14	+12	173	9	2	3	1	6	3	0	0	DAI	—
				2585	+08	+63	224	15	4	4	1	9	4	0	0	ESI	*
5901	2016 / 09 / 11	2155	148.3	2591	+05	-04	144	5	2	3	1	2	3	0	0	DSI	—
				2589	+15	+27	175	8	2	5	1	3	5	0	0	DAI	—
				2585	+08	+77	225	3	3	0	1	3	0	0	0	ESO	—
5902	2016 / 09 / 22	2230	2.7	2597	-13	-13	350	2	1	0	1	2	0	0	0	HAX	—
				2593	+08	+44	047	6	2	4	1	2	4	0	0	DSI	—
				2596	+05	+57	060	3	1	2	1	1	2	0	0	CSI	—
5903	2016 / 09 / 26	2025	311.1	2597	-14	+38	349	16	4	5	1	11	5	0	0	DAC	—

\* easternmost (ie. following) penumbra disintegrated into 3 penumbræ.

# Georgi Dobrovolski Solar Observatory



## REGION CO-ORDINATES AND CLASSIFICATIONS FOR OCTOBER 2016

All observations carried out by HOWARD BARNES .

Telescope : 76 mm refractor ( f.l. 910 mm ) .

Observed by PROJECTION . Full disc diameter = 145 mm approx .

CM = Central Meridian longitude, stated in degrees .

REG. = NOAA/SWPC Region Numbers .

B = Heliographic Latitude ( + if NORTH , - if SOUTH ) .

CMD = Degrees of Longitude in respect to the Central Meridian ( - if EAST, + if WEST) .

L = Carrington Longitude .

Stated times (UT) approximate Co-ordinated Universal Time / Temps Universel Coordonné (UTC).

OBS	DATE	UT	CM	REG.	B	CMD	L	f	p	s	gr	grfp	grf	efp	ef	Class.	Remarks
5904	2016 / 10 / 02	2030	231.9	2598	+12	-60	172	1	0	1	0	0	0	0	1	AXX	—
5905	2016 / 10 / 07	2130	165.4	2600	+11	-61	104	1	1	0	0	0	0	1	0	HSX	—
				2599	-15	-19	146	11	1	4	1	7	4	0	0	CKI	—
				2598	+14	+09	174	13	2	9	1	4	9	0	0	DAI	--
5906	2016 / 10 / 10	2010	126.5	2600	+11	-22	105	3	1	2	1	1	2	0	0	CSI	—
				2599	-15	+18	145	12	1	3	1	9	3	0	0	CAI	—
				2598	+15	+48	175	4	1	3	1	1	3	0	0	CSI	—
5907	2016 / 10 / 12	2005	100.2	2602	+06	-59	041	1	0	1	0	0	0	0	1	AXX	—
				2600	+11	+04	104	1	1	0	0	0	0	1	0	HSX	—
				2599	-14	+47	147	8	2	2	1	6	2	0	0	DAI	tight
5908	2016 / 10 / 13	2000	87.0	2602	+07	-47	040	1	1	0	0	0	0	1	0	HSX	small
				2600	+11	+18	105	1	1	0	0	0	0	1	0	HSX	—
				2599	-15	+58	145	3	2	0	1	3	0	0	0	DAO	—
5909	2016 / 10 / 15	2005	60.6	2602	+06	-18	043	1	1	0	0	0	0	1	0	HSX	—
				2600	+11	+45	106	3	1	2	1	1	2	0	0	CSI	—
5910	2016 / 10 / 17	2020	34.1	2602	+06	+09	043	2	1	1	1	1	1	0	0	CSO	—
				—	+05	+32	066	1	0	1	0	0	0	0	1	AXX	big
				2600	+13	+71	105	1	1	0	0	0	0	1	0	HSX	—
5911	2016 / 10 / 20	2045	354.3	2602	+06	+52	046	3	2	0	1	3	0	0	0	DAO	—
5912	2016 / 10 / 21	1950	341.6	2603	+13	-07	335	3	2	2	1	1	2	0	0	DSI	*
				2602	+06	+64	046	1	0	1	0	0	0	0	1	AXX	—
5913	2016 / 10 / 22	2005	328.3	2603	+13	+07	335	4	1	3	1	1	3	0	0	CSI	—
5914	2016 / 10 / 27	2010	262.3	2603	+13	+79	341	1	1	0	0	0	0	1	0	HSX	—
5915	2016 / 10 / 29	1930	236.3	2604	+07	+25	261	2	0	2	1	0	2	0	0	BXO	small
5916	2016 / 10 / 30	1940	223.0	—	—	—	—	0	0	0	0	0	0	0	0	—	—
5917	2016 / 10 / 31	1950	209.7	2605	+07	-19	191	5	2	3	1	2	3	0	0	DSI	small

\* Region 2603 contains an umbra-free penumbra, the first seen (by the GDSO) in 43 years of observing the Sun.

# Georgi Dobrovolski Solar Observatory



## REGION CO-ORDINATES AND CLASSIFICATIONS FOR NOVEMBER 2016

All observations carried out by HOWARD BARNES .

Telescope : 76 mm refractor ( f . l . 910 mm ) .

Observed by PROJECTION . Full disc diameter = 145 mm approx .

CM = Central Meridian longitude, stated in degrees .

REG. = NOAA/SWPC Region Numbers .

B = Heliographic Latitude ( + if NORTH , - if SOUTH ) .

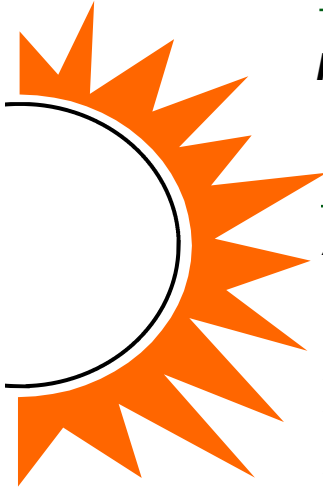
CMD = Degrees of Longitude in respect to the Central Meridian ( - if EAST , + if WEST ) .

L = Carrington Longitude .

Stated times (UT) approximate Co-ordinated Universal Time / Temps Universel Coordonné (UTC).

OBS	DATE	UT	CM	REG.	B	CMD	L	f	p	s	gr	grfp	grf	efp	ef	Class.	Remarks
5918	2016 / 11 / 02	1935	183.5	—	—	—	—	0	0	0	0	0	0	0	0	—	—
5919	2016 / 11 / 13	1935	38.5	2610	+14	-17	021	4	2	1	1	3	1	0	0	DAI	—
				2609	-09	+13	051	6	2	3	1	3	3	0	0	DSI	class correct
5920	2016 / 11 / 19	2010	319.0	—	—	—	—	0	0	0	0	0	0	0	0	—	—
5921	2016 / 11 / 20	2020	305.8	—	—	—	—	0	0	0	0	0	0	0	0	—	—
5922	2016 / 11 / 21	1955	292.8	—	—	—	—	0	0	0	0	0	0	0	0	—	—
5923	2016 / 11 / 22	2050	279.1	—	—	—	—	0	0	0	0	0	0	0	0	—	—
5924	2016 / 11 / 23	2045	266.0	2612	+07	-70	196	1	1	0	0	0	0	1	0	HHX	—
5925	2016 / 11 / 27	1915	214.1	2612	+08	-19	195	3	1	0	1	3	0	0	0	HAX	—
				2613	+12	+49	263	2	1	1	1	1	1	0	0	CSO	—
5926	2016 / 11 / 30	1910	174.6	2615	-07	-41	134	2	1	1	1	1	1	0	0	CSO	—
				2614	+05	-11	164	6	2	3	1	3	3	0	0	DAI	small
				2612	+08	+19	194	5	2	1	1	4	1	0	0	DAI	tight

# Georgi Dobrovolski Solar Observatory



## REGION CO-ORDINATES AND CLASSIFICATIONS FOR DECEMBER 2016



All observations carried out by HOWARD BARNES .

Telescope : 76 mm refractor ( f. l. 910 mm ) .

Observed by PROJECTION . Full disc diameter = 145 mm approx .

CM = Central Meridian longitude, stated in degrees .

REG. = NOAA/SWPC Region Numbers .

B = Heliographic Latitude ( + if NORTH , - if SOUTH ) .

CMD = Degrees of Longitude in respect to the Central Meridian ( - if EAST, + if WEST) .

L = Carrington Longitude .

Stated times (UT) approximate Co-ordinated Universal Time / Temps Universel Coordonné (UTC).

OBS	DATE	UT	CM	REG.	B	CMD	L	f	p	s	gr	grfp	grf	efp	ef	Class.	Remarks
5927	2016 / 12 / 01	1945	161.1	2615	-07	-24	137	7	3	3	1	4	3	0	0	DAC	—
				2616	+17	+03	164	4	1	2	1	2	2	0	0	CAI	—
				2614	+06	+05	166	1	1	0	0	0	0	1	0	HSX	—
				2612	+09	+34	195	5	2	2	1	3	2	0	0	DAI	tight
5928	2016 / 12 / 03	2050	134.2	2615	-07	+05	139	16	2	9	1	7	9	0	0	DAI	long
				2612	+09	+60	194	1	0	1	0	0	0	0	1	AXX	—
5929	2016 / 12 / 04	1940	121.6	2615	-07	+17	139	14	2	8	1	6	8	0	0	DAI	long
5930	2016 / 12 / 05	1945	108.4	2615	-07	+31	139	11	3	4	1	7	4	0	0	DAC	long
5931	2016 / 12 / 06	1935	95.3	2615	-07	+43	138	12	2	6	1	6	6	0	0	DAI	long
5932	2016 / 12 / 12	1925	16.3	2617	+16	+56	072	2	1	1	1	1	1	0	0	CSO	—
5933	2016 / 12 / 19	1945	283.9	—	—	—	—	0	0	0	0	0	0	0	0	—	—
5934	2016 / 12 / 20	1955	270.7	2620	-23	+34	305	7	2	3	1	4	3	0	0	DAI	—
5935	2016 / 12 / 22	1935	244.5	—	—	—	—	0	0	0	0	0	0	0	0	—	—
5936	2016 / 12 / 25	1950	204.9	—	—	—	—	0	0	0	0	0	0	0	0	—	—
5937	2016 / 12 / 29	1930	152.4	—	—	—	—	0	0	0	0	0	0	0	0	—	—