

2026

8 Jan Significant halo [CME](#)

10-11 Jan double G2 **GEOMAGNETIC STORM: Kp=6 Dst= -(52-56) Bz~ -11**

11 Jan 23:14 – Classic LDE M3.3 farside [flare](#), SE-limb event, Significant [CME](#)

18 Jan

The DIRECD coronal mass ejection direction **catalog**: three-dimensional propagation inferred from coronal dimmings

[Shantanu Jain](#), [Tatiana Podladchikova](#), [Karin Dissauer](#), [Astrid Veronig](#), [Amaia Razquin](#)

ApJS 2026

<https://arxiv.org/pdf/2608.20908>

18 -20 Jan 18:09– Classic LDE X1.9/3B flare, AR4341, S11E20, S5~4200, type II/2+IV/1, super-fast [full halo CME](#), SEP J10~ $1.9 \cdot 10^3 \rightarrow 3.7 \cdot 10^4$ J100~0.54→0.24

>19 d: A severe (G4) long-term **GEOMAGNETIC STORM: Kp=8.5 Dst= -119→-218 Bz~(-58)→(+80), large Forbush**

Continued activity of the 25th cycle: largest in 20 years. Ground-level enhancement and Forbush decrease

B.Sargsyan, [A.Chilingarian](#)

2026

<https://arxiv.org/pdf/2601.19289>

21 Jan 07:12 – short M3.4/1B, AR4349, S18E62

Large **AR4366** has produced 17 [M-class](#) solar flares and 3 [X-class](#) flares mainly without CMEs

<https://www.swpc.noaa.gov/>

https://spaceweathergallery2.com/indiv_upload.php?upload_id=230767

25 Jan

Oscillation Period Properties of Sunspots in the 8-10 μ m Infrared Band: A Multi-Dataset Analysis

[Suo Liu](#)

ApJ 2026

<https://arxiv.org/pdf/2607.15601>

1 Feb ~10:00–M6.6 , ~12:30–**X1.05**, ~23:30–**X8.1/3B**, N12E31, type II/3, CME
short quasi-LDE flares

2 Feb 00:36–**X2.8**, 02:42|02:51–M4.4|M5.2, 04:47–M3.0,
08:14–**X1.6**, 11:24–M6.7, imp S9~200, 15:01–M4.0/1N, N13E25, ~20:00–M3.0,
~21:00–M3.3

3 Feb 07:01–M7.2/1N, 07:47–M3.6, 10:12–M3.6/1F, N14E14, 14:08–**X1.5**, imp S9~300,
14:56–M7.2, 23:10–M3.5

4 Feb 02:39–M4.9/1F, N12E06, ~10:10–M3.1, 12:13–imp [X4.2](#)

5 Feb G2 **GEOMAGNETIC STORM: Kp=5+ Dst= 62 Bz~ -5**

14-15 Feb G2 **GEOMAGNETIC STORM: Kp=5+ Dst= -49 Bz~ -14**

A co-rotating interaction region (CIR) due to trans-equatorial CH

16 Feb 04:35–M2.4 shortLDE, AR located behind the E-limb CME

25 Feb ~16:00– short M2.3 LDE

A magnetic filament erupted, minor CME toward Earth.

13-14 Mar G2 **GEOMAGNETIC STORM: Kp=6 Dst= -72 Bz~ -10**

A co-rotating interaction region (CIR) due to narrow trans-equatorial CH

16 Mar 12:15–short M2.7, AR 4392, S16E16, S5~380, type II(3), **EARTH-DIRECTED CME?**

17 Mar 09:04– spike M1.3, AR 4392, S14E12

18 Mar 08:42– short M2.7, AR 4392, S16W00, S3~230, CME

20-21 Mar Strong G3 **GEOMAGNETIC STORM: Kp=7 Dst= -85 Bz~ -25**

26 Mar 06:23–spike M3.9/1N, AR4403, N13E59, S5~120, type II(2)

28 Mar 04:16- classic LDE M1.3, AR4405, S25E54, significant SE CME

30 Mar 03:19–outstanding **LDE X1.4**, AR4405, S25E54, S5~1800, type II(2), significant SE [CME](#)

1-3... Mar Медленный подъём >10 МэВ SEP до J10~6.5

2 Mar G2 **GEOSTORM: Kp=5.5 Dst= -70 Bz~ -10** in response to CH and CME on 1 Apr
18:15 –short **M3.5/2B**, AR4404, N12W16

3 Mar G2 **GEOSTORM: Kp=6.5 Dst= -82 Bz~ -11**

3-4 Mar Серия коротких >M1.0 вспышек из центральной AR4409, без CME

4 Mar 01:17–spike+PE **M7.5**, AR4409, N01W05, imp S9~180

9 Mar 08:45–short M1.0/SF, AR4409, N02W77

7 Apr

Large-scale Morphology of the Optical F-corona from a Total Solar Eclipse Observation During the Artemis II Lunar Flyby

18-19 Apr G2 **GEOSTORM: Kp=5.5 Dst= -88 Bz~ -14** due to CH

20-21 Apr **GEOSTORM: Kp=5.0 Dst= -57 Bz~ -8**

23 Apr 4 >M1.0 short flares from ARs 4419 and 4420

24 Apr 01:07 – **short+PE X2.4 flare**, AR4419, N15W67, imp S9~3400, large NW eruption, coronal wave

08:13 – spike **X2.5/2B flare**, AR4419, imp S15~7100, type II(3),
one more large NW eruption

09:07–short LDE M1.9 flare from AR4422 adjoining to **X2.5/2B flare** in AR4419,
contribution from AR4423, S04E37

W near-limb CastelliU two X-class flares, but there are not SEPs

13:01– short LDE M1.7/sf flare, AR4423, S04E37

18:15–short LDE M6.4/1F flare, AR4419, N18W80

26 Apr 22:57–spike M6.0, AR 4425, N05E55, imp S9~490

4 May 01:33–short M1.8 flare, NE-limb event, clear CME

4-5 May G2 **GEOSTORM: Kp=6+ Dst= -66 Bz~ - 10**
due to a slow moving, but favorably oriented transient feature - a weak CME

7 May 02:15–classical LDE C4.5 flare from NE-limb, CME,
15:14–classical LDE M2.6 flare from NE-limb, clear CME

10 May 13:39–LDE **M5.7/2B**, AR4436, N19E62, S9~750, type II(3),
significant **emerging CME** deflecting two coronal streamers

15-16 May G2 **GEOSTORM: Kp=6+ Dst= -53 Bz~ - 11 Трансэкваториальная КД.**

16 May 16:12–short LDE M1.9/2N flare, AR4436, N20W16, imp S3~170
17:42–spike M1.9/SF, AR4438, N21W67

22 May 10:29–LDE M2.3 flare, AR4436, ? N18W91

25 May ~>22 UT–Farside NW explosion, flare C4 LDE, SEP J10~15, significant CME

29 May 05:37–C7.6 + 07:04–**M1.1/SF** – two LDEs, AR4455, N14E61, radio VI/2

2 Jun 10:05–short **M1.2/1N** in the neighborhood of C-class flares, AR4455, N11E01

16:50–spike M3.3/2B, AR4455, N11W06, imp S9~360, type II/2, narrow NE CME?

3 Jun 01:36–spike M9.3/SF, AR4455, N13W11, imp S9~2100
07:00– spike M7.7/2B, AR4455, N16W15, imp S15~2500, type II/3, narrow NW CME
11:28–**spike X1.0/1N**, AR4455, N13W15, imp S9~660

6 Jun 14:01–LDE M1.8/2N, AR4461, S21E24, coronal wave, radio S3~190, SE wide [CME](#)

11 Jun 00:44–classical LDE C6.1/1F, AR4465, N09E38, coronal wave, type II/2, IV,
[a halo CME](#)

20 Jun 01:51–short M1.3 flare, AR4472, S13E61

21 Jun 02:46– short M2.6 flare, AR4473, S08E60
19:28–short plus PE **M6.8/2B** flare, AR4473, S07E55, type II/1

23 Jun >20 UT near E-limb activity: C7 flare, remarkable CME

29 Jun ~20:30–short ~M1.5, ?AR4475, S10W47

30 Jun 01:16–short M1.3, AR4475, S09W51
12:57–short **M5.8** flare, AR4475, S09W63, no CME?
~20:50–**spike+PE component X1.1**, AR4479, N16W24, significant N/NW CME

30 Jun-1 Jul weak **GEOSTORM: Kp=5- Dst= -19 Bz~ -8**

HIGH SOLAR ACTIVITY Three sunspots are participating (4477, 4478 and 4479), and they appear to be talking to one another.

1 Jul 06:27–short **M1.1/1N**, AR4479, N19W24
07:35–spike M1.5/SN, AR4479, N17W21, imp S9~660
08:17– spike M1.5/SN, AR4479, N17W21, imp S9~1100
10:08– spike M1.3/1N, AR4479, N17W21, imp S9~260
14:31– spike M1.1, AR4479, N17W21, imp S15~880
14:54–short **M2.6/2N**, AR4479, N15W27
19:43–short LDE **M3.5/2B**, AR4479, N15W32
20:22–spike M1.8/SF, **AR4475**, S10W75, imp S9~510
~22:30–spike ~**M6.5**, ~**AR4478**, S05W22

2 Jul 01:56– short **M4.2/SF**, AR4479, N16W30, imp S3~100, NW CME

3 Jul 18:11–short **M6.7**, AR4479, N15W69?, imp S3~220, type II/2
18:59–spike **M6.3/2B**, AR4478, S07W51, imp S9~1300, type II/2

3-4 Jul **G3 GEOSTORM: Kp=7+ Dst= -150 Bz~ -18, small SEP J10~1**

4 Jul 03:32–short **M4.0/1N**, AR4479, N15W76
11:12– short **M3.2/1N**, AR4479, N14W83

13:51– short **M3.2/1N**, AR4479, N15W81
20:41– **spike+PE component X1.3**, AR4482, S08E75, imp S5~980

5 Jul 05:37–short **M2.3/SF**, AR4479, N18W80
17:57–spike **M5.3**, AR4479, N13W87, significant CME

7 Jul 14:19–spike **M4.0/1B**, AR4482, S11E53, type II/1
After ~22:30 two sides of the sun exploded almost simultaneously by significant NE and NW CMEs

8 Jul 17:56–spike **M1.5/1N**, AR4482, S11E37, imp S5~1009

9 Jul 02:27–short **M1.1/SF**, AR4482, S08E29

12 Jul 08:11– LDE **M1.1/SF**, AR4485, S09W70

15 Jul ~22 UT– LDE ~**M1 flare**, SE limb

20 Jul 14:36–**spike M2.5**, AR4493, N05E15
19:20– **spike M1.1**, AR4493,
22:25– **spike M3.4**, AR4493, N05E08

21 Jul 17:27–**spike M1.9+PE component**, AR4493, N05E02

22 Jul 06:35– **clear spike M3.6**, AR4493, N07W04, imp S15~450

23-24 Jul G1 **GEOSTORM: Kp=5+ Dst= -39 Bz~ -7**

26 Jul 15:28–**spike M3.2**, AR4494, S06E06, imp S9~320, type II/2

27 Jul 02:43–**spike M1.0**, AR4494, type II/2

30 Jul 16:58–classical LDE ~**M2**, AR4492, N16W70, type II, large halo NW CME,
SEP J10~15

Toward Operational Solar Flare Peak Flux Nowcasting: A Strategy Combining Real-Time Data, Machine Learning, and NOAA Flare Detection Criteria

[Kangwoo Yi](#), [Qin Li](#), [Haodi Jiang](#), [Meiqi Wang](#), [Haimin Wang](#), [Bo Shen](#)

ApJ 2026

<https://arxiv.org/pdf/2608.20062>

2-3 Aug G1-2 **GEOSTORM: Kp=6- Dst= -45 Bz~ -16**

8 Aug G1-2 **GEOSTORM: Kp=6- Dst= -60 Bz~ -17**

18-19 Aug fragmented G1-class **GEOSTORM: Kp=5 Dst= -53 Bz~ -9.6**

19 Aug 18:51–short LDE **M1.0**, AR5413, N03E79

- 20 Aug** 08:05– **short M1.8**, AR4513, N04E73
11:42– **short M8.1**, AR4513, N06E79, type II/3, [an impressive CME](#)
16:11– **short M2.9/1F**, AR4513, N03E71, imp S15~370
- 21 Aug** 10: 17– **classical LDE M1.6**, AR4507, N04W91, imp S5~120
- 24 Aug** 19:36– **short M1.7/1B**, AR4513, N06E12
- 25 Aug** 01:26– **short M1.9**, AR4513, N04E13
04:02– **short M1.0/SN**, AR4513, N04E14
06:40–**spike+PE M1.8/1N**, AR4513, N04E14, imp S9~160
10:02– **short+PE M6.9/1B**, AR4513, N03E06, imp S5~560, type II/3, **EARTH-DIRECTED CME**
- 26 Aug** 06:34– **spike M2.2/1B**, AR4513, N04E15?, imp S9~280, type II/2
12:14– **spike M1.0/SF**, AR4513, N05W05
- 2 Sep** 19:20–**LDE M3.0**, AR4524 N12E76, type II/2
- 4 Sep** 07:53–**spike M1.2/1N**, AR4524 N14E71
- 5 Sep** 15:18–**short M1.0/1F**, AR4520 S12W65
- 7-8 Sep** **GEOSTORM: Kp=5 Dst= -41 Bz~ -12.5**
- 13 Sep** 19:45– imp+classical LDE C1.4, AR4528 S15W14, **14d - SEP~5.0**