

November 2003

!!! 18 Oct - 4 Nov 2003

Very High activity from two large region, X-class flares, interconnected dimmings and chains,

large CMEs

<http://soho.nascom.nasa.gov/hotshots/>

RHESSI Major Events: <http://hessi.ssl.berkeley.edu/~dsmith/hessi/HME.html>

Predicting Flares and Solar Energetic Particle Events: The FORSPEF Tool

A. [Anastasiadis](#), A. Papaioannou, I. Sandberg, M. Georgoulis, K. Tziotziou, A. Kouloumvakos, P. Jiggins

[Solar Physics](#) September 2017, 292:134

A new approach to the maser emission in the solar corona

Stephane [Regnier](#)

A&A 2015

<http://arxiv.org/pdf/1507.07350v1.pdf>

[Hu, Q.](#), C. W. Smith, N. F. Ness, and R. M. Skoug (2005), On the magnetic topology of October/November 2003 events, *J. Geophys. Res.*, 110, A09S03, doi:10.1029/2004JA010886.

25 October- 3 November, 2003.

Wavelet Analysis of Forbush Decreases at High-Latitude Stations During Geomagnetic Disturbances

Roshan Kumar [Mishra](#), Ashok Silwal, Rabin Baral, Binod Adhikari, Carlos Roberto Braga, Sujana Prasad Gautam, Priyanka Kumari Das & Yenca Migoya-Orue

Solar Physics volume 297, Article number: 26 (2022)

<https://link.springer.com/content/pdf/10.1007/s11207-022-01948-z.pdf>

Ground level enhancements of the solar cosmic rays and Forbush decreases in 23rd solar cycle

A. V. [Belov](#), E. A. Eroshenko, V. A. Oleneva, V. G. Yanke

PROCEEDINGS OF THE 31st ICRC, ŁÓDŹ 2009 File

Probing Subsurface Flows in Active Region NOAA 12192 - Comparison with NOAA 10486

Kiran [Jain](#), [S.C. Tripathy](#), [F. Hill](#)

ApJ 2017

<https://arxiv.org/pdf/1710.02137.pdf>

Dynamic Precursors of Flares in Active Region NOAA 10486

M. B. [Korsos](#), N. Gyenge, T. Baranyi, A. Ludmany

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<http://arxiv.org/pdf/1501.07257v1.pdf>

26 Oct – 25 Nov

A scheme for forecasting severe space weather

N. [Balan](#), Y. Ebihara, R. Skoug, K. Shiokawa, I. S. Batista, S. Tulasi Ram, Y. Omura, T. Nakamura, M.-C. Fok

JGR 2017 DOI: 10.1002/2016JA023853

<http://sci-hub.cc/doi/10.1002/2016JA023853>

+1 Nov - Several W eruptions from two W regions
+22 UT: SW eruption, See Events
23 UT: NOBE: SW reverse filament eruption

Radio Observations of Coronal Mass Ejections: Space Weather Aspects

Review

[Angelos Vourlidas](#), [Eoin P Carley](#) and [Nicole Vilmer](#)

Front. Astron. Space Sci. 7:43 2020

<https://www.frontiersin.org/articles/10.3389/fspas.2020.00043/full>

RADIO SIGNATURES OF CORONAL-MASS-EJECTION-STREAMER INTERACTION AND SOURCE DIAGNOSTICS OF TYPE II RADIO BURST

S. W. Feng, Y. Chen, X. L. Kong, G. Li, H. Q. Song, X. S. Feng, and Ying Liu
2012 ApJ 753 21, File

Coherent Radio Emissions Associated with Solar System Shocks **A Review**

Iver H. Cairns

M.P. Miralles, J. Sánchez Almeida (eds.), *The Sun, the Solar Wind, and the Heliosphere*, IAGA Special Sopron Book Series 4, DOI 10.1007/978-90-481-9787-3_23, c _Springer Science+Business Media B.V. 2011, pp. 267-338, File

PRE-FLARE ACTIVITY AND MAGNETIC RECONNECTION DURING THE EVOLUTIONARY STAGES OF ENERGY RELEASE IN A SOLAR ERUPTIVE FLARE

Bhuwan Joshi¹, Astrid M. Veronig², Jeongwoo Lee³, Su-Chan Bong⁴, Sanjiv Kumar Tiwari⁵ and Kyung-Suk Cho

2011 ApJ 743 195

Magnetic reconnection rate and spectral index for two double-ribbon flares

Zongjun Ning

Astrophys Space Sci (2008) 314: 137–143

<http://www.springerlink.com/content/e7rx14436110j210/fulltext.pdf>

SOLAR TYPE II RADIO BURSTS AND IP TYPE II EVENTS

H. V. Cane and W. C. Erickson

Astrophysical Journal, 623:1180–1194, 2005; File

++2 - Several W eruptions from two W regions, **GLE#67**

++09 UT: W-limb eruption and large CME

++17:20 UT: WS X8.3 flare, dimmings, halo CME, protons, See Events!!

Solar Gamma-Ray Evidence for a Distinct Population of > 1 MeV Flare-Accelerated Electrons

Gerald H. Share, [Ronald J. Murphy](#), [Brian R. Dennis](#), [Justin D. Finke](#)

ApJ 2024

<https://arxiv.org/pdf/2412.19586> File

Solar Energetic Particle-Associated Coronal Mass Ejections Observed by the Mauna Loa Solar Observatory Mk3 and Mk4 Coronameters

I. G. Richardson, [O. C. St Cyr](#), [J. T. Burkepile](#), [H. Xie](#), [B. J. Thompson](#)

Solar Phys. 2023

<https://arxiv.org/pdf/2308.10826.pdf>

Forecasting >300 MeV SEP events: Extending SPARX to high energies

Charlotte O. G. **Waterfall**, [Silvia Dalla](#), [Mike S. Marsh](#), [Timo Laitinen](#), [Adam Hutchinson](#)
Space Weather **2023**
<https://arxiv.org/pdf/2306.01530.pdf> File

Modelling the transport of relativistic solar protons along a heliospheric current sheet during historic GLE events

Charlotte O. G. **Waterfall**, [Silvia Dalla](#), [Timo Laitinen](#), [Adam Hutchinson](#), [Mike Marsh](#)
ApJ **2022**
<https://arxiv.org/pdf/2206.11650.pdf> File

New reconstruction of event-integrated spectra (spectral fluences) for major solar energetic particle events

Sergey A. **Koldobskiy**, [Osku Raukunen](#), [Rami Vainio](#), [Gennady A. Kovaltsov](#), [Ilya G. Usoskin](#)
A&A **2021**
<https://arxiv.org/pdf/2101.10234.pdf>

The Correlation between Energy Spectra and Element Abundances in Solar Energetic Particles

Donald V. **Reames**
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Development of a method for determining the search window for solar flare neutrinos

K. **Okamoto**, [Y. Nakano](#), [S. Masuda](#), [Y. Itow](#), [M. Miyake](#), [T. Terasawa](#), [S. Ito](#), [M. Nakahata](#)
Solar Phys. **2019**
<https://arxiv.org/pdf/1909.10715.pdf>

Flare-productive active regions

Review

Shin **Toriumi**, [Haimin Wang](#)
Living Reviews in Solar Physics **2019**
<https://arxiv.org/pdf/1904.12027.pdf>

Frequency rising sub-THz emission from solar flare ribbons

E.P. **Kontar**, [G.G. Motorina](#), [N.L.S. Jeffrey](#), [Y.T. Tsap](#), [G.D. Fleishman](#), [A.V. Stepanov](#)
A&A **2018**
<https://arxiv.org/pdf/1810.03922.pdf>

Spatial Organization of Seven Extreme Solar Energetic Particle Events

Leon **Kocharov**¹, Silja Pohjolainen², Mike J. Reiner^{3,4}, Alexander Mishev⁵, Haimin Wang^{6,7}, Ilya Usoskin^{1,5}, and Rami Vainio⁸
2018 ApJL 862 L20 File
<http://sci-hub.tw/http://iopscience.iop.org/article/10.3847/2041-8213/aad18d/meta>

Model of energy spectrum parameters of ground level enhancement events in solar cycle 23†

S.-S. **Wu**, G. Qin
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<http://sci-hub.tw/10.1002/2017JA024638>

Investigating the Origins of Two Extreme Solar Particle Events: Proton Source Profile and Associated Electromagnetic Emissions

Leon **Kocharov**¹, Silja Pohjolainen², Alexander Mishev³, Mike J. Reiner⁴, Jeongwoo Lee^{5,6}, Timo Laitinen⁷, Leonid V. Didkovsky⁸, Victor J. Pizzo⁹, Roksoon Kim¹⁰, Andreas Klassen¹¹ ...
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<http://iopscience.iop.org/sci-hub.cc/0004-637X/839/2/79/>

Solar flares, coronal mass ejections and solar energetic particle event characteristics

Athanasios **Papaioannou**^{1*}, Ingmar Sandberg¹, Anastasios Anastasiadis¹, Athanasios Kouloumvakos², Manolis K. Georgoulis³, Kostas Tziotziou^{1,3}, Georgia Tsiropoula¹, Piers Jiggins⁴ and Alain Hilgers
J. Space Weather Space Clim., 6, A42 (2016)

<http://www.swsc-journal.org/articles/swsc/pdf/2016/01/swsc150076.pdf>

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P. **Kühl**, N. Dresing, B. Heber, A. Klassen

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<http://link.springer.com/article/10.1007/s11207-016-1033-8>

Deriving the properties of coronal pressure fronts in 3-D: application to the 17 May 2012 ground level enhancement

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<http://arxiv.org/pdf/1605.05208v1.pdf>

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Christopher Samuel **Moore**, Phillip Clyde Chamberlin, Rachel Hock

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SCATTER-DOMINATED INTERPLANETARY TRANSPORT OF SOLAR ENERGETIC PARTICLES IN LARGE GRADUAL EVENTS AND THE FORMATION OF DOUBLE POWER-LAW DIFFERENTIAL FLUENCE SPECTRA OF GROUND-LEVEL EVENTS DURING SOLAR CYCLE 23

Gen **Li** and Martin A. Lee

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Study of Temporal Evolution of Emission Spectrum in a Steeply Rising Submillimeter Burst

J. P. **Li**, A. H. Zhou, X. D. Wang

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O. **Burtseva**, J. C. Martínez-Oliveros, G. J. D. Petrie, A. A. Pevtsov

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<http://arxiv.org/pdf/1412.8676v1.pdf> File

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В.С. **Махмутов**, Г.А. Базилевская, Ю.И. Стожков, А.А. Квашнин

ИКИ-2014, Сессия: Солнце

<http://plasma2014.cosmos.ru/presentations>

Measurements of Electron Anisotropy in Solar Flares Using Albedo with RHESSI X-Ray Data

Е. С. М. **Dickson**, Е. P. Kontar

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Solar flares at submillimeter wavelengths **A review**

Sam **Krucker** · C.G. Gimenez de Castro · H.S. Hudson · G. Trotter · T.S. Bastian · A.S. Hales · J. Kašparova · K.-L. Klein · M. Kretzschmar · T. Luthi · A. Mackinnon · S. Pohjolainen · S.M. White
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Too few? Too many?

Simois, P. J. A. and Kontar, E. P.

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Implications for electron acceleration and transport from non-thermal electron rates at looptop and footpoint sources in solar flares

Simois, P. J. A. and Kontar, E. P.

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Energy Spectra, Composition, and Other Properties of Ground-Level Events During Solar Cycle 23

R. A. **Mewaldt**, M. D. Looper, C. M. S. Cohen, D. K. Haggerty, A. W. Labrador, R. A. Leske, G. M. Mason, J. E. Mazur and T. T. von Rosenvinge

Space Science Reviews, 171, Numbers 1-4, 97-120, 2012, DOI: 10.1007/s11214-012-9884-2 **File**

ABRUPT CHANGES OF THE PHOTOSPHERIC MAGNETIC FIELD IN ACTIVE REGIONS AND THE IMPULSIVE PHASE OF SOLAR FLARES

E. W. Cliver¹, G. J. D. Petrie², and A. G. Ling

2012 ApJ 756 144

Properties of Ground level enhancement events and the associated solar eruptions during solar cycle 23.

N. **Gopalswamy**, H. Xie, S. Yashiro, S. Akiyama, P. Mäkelä, I.G. Usoskin,

E-print, May 2012, **File**; Space Sci. Rev., 2012

Active regions associated with ground-level events.

N.V. **Nitta**, Y. Liu, M.L. DeRosa, R.W. Nightingale,

Space Sci. Rev. 2012, **File**

Interplanetary magnetic structure guiding solar relativistic particles

S. **Masson**^{1,2}, P. D'émoulin¹, S. Dasso³, and K.-L. Klein¹

E-print, 24 Oct 2011, **File**; A&A

Intense Ground-Level Enhancements of Solar Cosmic Rays During the Last Solar Cycles

M. **Andriopoulou** · H. Mavromichalaki · C. Plainaki · A. Belov · E. Eroshenko

Solar Phys (2011) 269: 155–168, **File**

RAPID PULSATIONS IN SUB-THz SOLAR BURSTS

Pierre **Kaufmann**^{1,2}, C. Guillermo Gimenez de Castro¹, Emilia Correia^{1,3}, Joaquim E. R. Costa³, Jean-Pierre Raulin¹,

and Adriana Silva Valio¹
Astrophysical Journal, 697:420–427, 2009

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G.A. [Bazilevskaya](#)

[Advances in Space Research](#)

[Volume 43, Issue 4](#), 16 February 2009, Pages 530-536, [File](#)

Reiner, M. J.; Jackson, B. V.; Webb, D. F.; Mizuno, D. R.; Kaiser, M. L.; Bougeret, J.-L. Coronal mass ejection kinematics deduced from white light (Solar Mass Ejection Imager) and radio (Wind/WAVES) observations

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Evidence that Synchrotron Emission from Nonthermal Electrons Produces the Increasing Submillimeter Spectral Component in Solar Flares

Adriana V.R. Silva · G.H. Share · R.J. Murphy · J.E.R. Costa · C.G. Gimenez de Castro · J.-P. Raulin · P. Kaufmann

Solar Phys (2007) 245: 311–326

<http://www.springerlink.com/content/c68077532823nh47/fulltext.pdf>

Solar neutron events in association with large solar flares in November 2003

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Advances in Space Research, Volume 38, Issue 3, 2006, Pages 425-430

Coronal mass ejection kinematics deduced from white light (Solar Mass Ejection Imager) and radio (Wind/WAVES) observations

[M. J. Reiner](#), [B. V. Jackson](#), [D. F. Webb](#), [D. R. Mizuno](#), [M. L. Kaiser](#), [J.-L. Bougeret](#)

JGR [Volume 110, Issue A9](#) A09S14 2005

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<https://doi.org/10.1029/2004JA010943>

++3 - Several W eruptions from two W regions

++01:30 UT: WS X2.7 flare, See Events!!

++09:40 UT: WN X3.9 flare, See Events!!

!!!Spectacular multi-band type II burst!!!

High-resolution observations with ARTEMIS/JLS and the NRH: IV. Imaging spectroscopy of spike-like structures near the front of type-II bursts

[S. Armatas](#), [C. Bouratzis](#), [A. Hillaris](#), [C.E. Alissandrakis](#), [P. Preka-Papadema](#), [A. Kontogeorgos](#), [P. Tsitsipis](#), [X. Moussas](#)

A&A 2022

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On the Issue of the Origin of Type II Solar Radio Bursts

Gennady [Chernov](#)¹ and Valery Fomichev¹

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<https://doi.org/10.3847/1538-4357/ac1f32>

Recent Results on the Fine Structure in Cosmic Radio Emission
Zebra Pattern in Solar and Pulsar Radio Emission

Book

G.P. **Chernov**, V. Fomichev, S. Fainshtein
LAP LAMBERT Academic Publishing 2021 File

Detection of spike-like structures near the front of type-II bursts

S. **Armatas**, **C. Bouratzis**, **A. Hillaris**, **C.E. Alissandrakis**, **P. Preka-Papadema**, **X. Moussas**, **E. Mitsakou**, **P. Tsitsipis**, **A. Kontogeorgos**
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Karl-Ludwig **Klein**
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<https://link.springer.com/content/pdf/10.1007%2F978-3-319-60051-2.pdf>
File Malandraki_Crosby_SEPs_Forecasting and Analysis_Book.pdf

Low-Frequency Radio Bursts and Space Weather Review

Nat **Gopalswamy**
URSI Asia-Pacific Radio Science Conference in Seoul, August 21-25, 2016 2016
<http://arxiv.org/pdf/1605.02218v1.pdf> File

Constraints on energy release in solar flares from RHESSI and GOES X-ray observations **I. Physical parameters and scalings**

A. **Warmuth** and G. Mann
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<http://www.aanda.org/articles/aa/pdf/2016/04/aa27474-15.pdf>

Review on Current Sheets in CME Development: Theories and Observations

Jun **Lin**, Nicholas A. Murphy, Chengcai Shen, John C. Raymond, Katharine K. Reeves, Jiayong Zhong, Ning Wu, Yan Li
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<http://solarphysics.livingreviews.org/Articles/IrsP-2015-3/> File

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<http://www.aip.de/mitglieder/aurass/paper/the-late-gradual-phase-of-solar-flares/view>

The magnitude and effects of extreme solar particle events

Piers **Jiggins***, Marc-Andre Chavy-Macdonald, Giovanni Santin, Alessandra Menicucci, Hugh Evans and Alain Hilgers
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<http://www.swsc-journal.org/articles/swsc/pdf/2014/01/swsc130038.pdf>

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Samuel **Krucker**, Brian Dennis, Manfred Bester, Laura Peticolas
http://hesperia.gsfc.nasa.gov/senior_review/2013/senior_review_proposal_2013.pdf, 2013, File

Radio evidence for breakout reconnection in solar eruptive events

H. **Aurass**, G. Holman, S. Braune, G. Mann, P. Zlobec
E-print, May 2013, File; A&A

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Henry [Aurass](#) and Gordon Holman:

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IMPULSIVE PHASE CORONAL HARD X-RAY SOURCES IN AN X3.9 CLASS SOLAR FLARE

Qingrong [Chen](#)¹ and Vahé Petrosian

2012 ApJ 748 33, [File](#)

Derivation of Stochastic Acceleration Model Characteristics for Solar Flares from *RHESSI* Hard X-ray Observations

Vahé [Petrosian](#) and Qingrong Chen

ApJ 712 L131-L134, 2010

Solar Flares as Natural Particle Accelerators: A High-energy View from X-ray Observations and Theoretical Models

Wei [Liu](#)

2008; [File of the book](#)

Microwave Neutral Line Associated Source and a Current Sheet

A.M. Uralov, V.V. Grechnev, G.V. Rudenko, I.G. Rudenko, H. Nakajima

E-print, March 2008; Solar Phys. (2008) 249: 315–335

<http://springerlink.com/content/hx055r63w8454618/fulltext.pdf>

See: -- C. Dauphin, N. Vilmer, T. Luthi, G. Trottet, S. Krucker, A. Magun

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Advances in Space Research (E-print, file, text)

Microwave Neutral Line Associated Source and a Current Sheet

A.M. Uralov, V.V. Grechnev, G.V. Rudenko, I.G. Rudenko, H. Nakajima

E-print, March 2008; Solar Phys.

Multi-Wavelength Signatures of Magnetic Reconnection of a Flare-Associated Coronal Mass Ejection

Bhuwan Joshi, P. K. Manoharan, Astrid M. Veronig, P. Pant, Kavita Pandey

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The study supports the standard CSHKP model of flares, which is consistent with nearly all eruptive flare models. More importantly, the results also contain evidence for breakout reconnection before the flare phase.

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Bhuwan [Joshi](#), P. K. Manoharan, A. M. Veronig, P. Pant, Kavita Pandey

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Shrinking and Cooling of Flare Loops in a Two-Ribbon Flare
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Observations of a soft X-ray rising loop associated with a type
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Astronomy and Astrophysics, Volume 455, Issue 1, **2006**, pp.339-348

Characteristics of Solar Flare Hard X-ray Emissions: Observations
and Models, Thesis, RHESSI, Wei Liu, E-print, Dec **2006**, file

B. Vrsnak,¹
BROADBAND METRIC-RANGE RADIO EMISSION ASSOCIATED WITH A
MORETON/EIT WAVE.
The Astrophysical Journal, 625:L67–L70, **2005**. (E-print, file, text)

See references in Aschwanden, Asytophys.-2004, p. 13 (e-print, **2005**)

The RHESSI observations have given us what appears to be a new class of coronal hard
X-ray sources, namely coronal sources that precede the impulsive phase. The prototype
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[Alissandrakis](#), C.E., Nindos, A., Hilaris, A., Caroublos, C., Artemis Team: **2005**, In: Danesy, D., Poedts,
S., De Groof, A., Andries, J. (eds.) *The Dynamic Sun: Challenges for Theory and Observations* **SP-600**,
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3-5 Nov

Precursory Signs of Large Forbush Decreases

M. [Papailiou](#), [M. Abunina](#), [H. Mavromichalaki](#), [A. Belov](#), [A. Abunin](#), [E. Eroshenko](#) & [V. Yanke](#)
Solar Physics volume 296, Article number: 100 (**2021**)
<https://link.springer.com/content/pdf/10.1007/s11207-021-01844-y.pdf>
<https://doi.org/10.1007/s11207-021-01844-y>

++4 Nov - Several W eruptions from two W regions

++12:30 UT: very clear and fast halo CME, backside!

++19:30 UT: W-limb X20 flare, spectacular dimmings and coronal wave;
halo CME; See Events!!!

Seeds and Sequences of Element Abundances in Solar Energetic Particle Events **Review**

Donald V. **Reames**

Space Sci. Rev **2024**

<https://arxiv.org/pdf/2404.05048.pdf> File

Interpretation of flat energy spectra upstream of fast interplanetary shocks

Silvia **Perri**, [Giuseppe Prete](#), [Gaetano Zimbardo](#), [Domenico Trotta](#), [Lynn B. Wilson III](#), [David](#)
[Lario](#), [Sergio Servidio](#), [Francesco Valentini](#), [Joe Giacalone](#)

ApJ **2023**

<https://arxiv.org/pdf/2301.05454.pdf>

Searching for neutrinos from solar flares across solar cycles 23 and 24 with the Super-Kamiokande detector as a **Review**

K. **Okamoto**, [K. Abe](#), [Y. Hayato](#), [K. Hiraide](#), [K. Hosokawa](#), [K. Ieki](#), [M. Ikeda](#), [J. Kameda](#),++++++
ApJ 2022
<https://arxiv.org/pdf/2210.12948.pdf>

Development of a method for determining the search window for solar flare neutrinos

K. **Okamoto**, [Y. Nakano](#), [S. Masuda](#), [Y. Itow](#), [M. Miyake](#), [T. Terasawa](#), [S. Ito](#), [M. Nakahata](#)
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<https://arxiv.org/pdf/1909.10715.pdf>

Frequency rising sub-THz emission from solar flare ribbons

E.P. **Kontar**, [G.G. Motorina](#), [N.L.S. Jeffrey](#), [Y.T. Tsap](#), [G.D. Fleishman](#), [A.V. Stepanov](#)
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<https://arxiv.org/pdf/1810.03922.pdf>

Extreme solar storms based on solar magnetic field

Brigitte **Schmieder**
Varsiti Conference in Varna June 2016 2017 File
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Spatial Offsets in Flare-CME Current Sheets

John C. **Raymond**, Silvio Giordano, Angela Ciaravella
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Which Bow Shock Theory, Gasdynamic or Magnetohydrodynamic, Better Explains CME Stand-off Distance Ratios from LASCO-C2 Observations ?

Jae-Ok **Lee**^{1,2}, Y.-J. Moon¹, Jin-Yi Lee³, R.-S. Kim², and K.-S. Cho²
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Solar flares, coronal mass ejections and solar energetic particle event characteristics

Athanasios **Papaioannou**^{1*}, Ingmar Sandberg¹, Anastasios Anastasiadis¹, Athanasios Kouloumvakos², Manolis K. Georgoulis³, Kostas Tziotziou^{1,3}, Georgia Tsiropoula¹, Piers Jiggins⁴ and Alain Hilgers
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<http://www.swsc-journal.org/articles/swsc/pdf/2016/01/swsc150076.pdf>

Review on Current Sheets in CME Development: Theories and Observations

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Hugh S. **Hudson**
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S. N. **Kuznetsov**, V. G. Kurt, B. Yu. Yushkov, I. N. Myagkova, V. I. Galkin, K. Kudela
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В.В. **Зайцев**, А.В. Степанов, П. Кауфман
ИКИ-2014, Сессия: Солнце
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Edward W. **Cliver**^{1*} and William F. Dietrich²
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Viktoria **Kurt**,¹ Karel Kudela,² Boris Yushkov,¹ and Vladimir Galkin¹
Advances in Astronomy, Volume **2013**, Article ID 690921, 15 pages. **File**

Solar flares at submillimeter wavelengths

A review

Sam **Krucker** · C.G. Gimenez de Castro · H.S. Hudson · G. Trotter · T.S. Bastian · A.S. Hales · J. Kašparova · K.-L. Klein · M. Kretschmar · T. Luthi · A. Mackinnon · S. Pohjolainen · S.M. White
Astronomy and Astrophysics Review, Volume 21, Issue 1, (**2013**) 21:58; **File**

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LOW IONIZATION STATE PLASMA IN CORONAL MASS EJECTIONS

Jin-Yi Lee¹ and John C. Raymond

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Unusual Emissions at Various Energies Prior to the Impulsive Phase of the Large Solar Flare and Coronal Mass Ejection of 4 November 2003

Pierre [Kaufmann](#), Gordon D. Holman, Yang Su, C. Guillermo Gimenez de Castro, Emilia Correia, Luis O. T. Fernandes, Rodney V. de Souza, Adolfo Marun and Pablo Pereyra
Solar Physics, Volume 279, Number 2 (2012), 465-475

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M. V. [Eselevich](#) and V. G. Eselevich

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A STUDY OF A NEW INCREASING SUBMILLIMETER SPECTRAL COMPONENT OF AN X28 SOLAR FLARE

A. H. [Zhou](#)¹, J. P. Li¹, and X. D. Wang²

Astrophysical Journal, 727:42 (5pp), 2011 January; **File**

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Pierre [Kaufmann](#)^{1,2}, C. Guillermo Gimenez de Castro¹, Emilia Correia^{1,3}, Joaquim E. R. Costa³, Jean-Pierre Raulin¹, and Adriana Silva V. alio¹

Astrophysical Journal, 697:420-427, 2009

Interplanetary Consequences of a Large CME

M. [Lahkar](#), P. K. Manoharan², K. Mahalakshmi², K. Prabhu², G. Agalya², S. Shaheda Begum², and P. Revathi

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THE CURRENT SHEET ASSOCIATED WITH THE 2003 NOVEMBER 4 CORONAL MASS EJECTION: DENSITY, TEMPERATURE, THICKNESS, AND LINE WIDTH

A. [Ciaravella](#)^{1, 2} and J. C. Raymond²

Astrophysical Journal, 686:1372Y1382, 2008

<http://www.journals.uchicago.edu/doi/pdf/10.1086/590655>

Solar neutron events in association with large solar flares in November 2003

K. [Watanabe](#), , Y. Murakia, Y. Matsubaraa, K. Murakamia, T. Sakoa, P. Mirandab, R. Ticonab, A. Velardeb, F. Kakimotoc, S. Ogioc, H. Tokunoc, H. Tsuchiyad, S. Shibatae, T. Sakaif, Y. Mizumotog, R. Ogasawarag, M. Nakagirig, A. Miyashitag and C. Lopateh

Advances in Space Research, Volume 38, Issue 3, 2006, Pages 425-430

The periodic variations of a white-light flare observed with ULTRACAM

M. [Mathioudakis](#), D.S. Bloomfield, D.B. Jess, V.S. Dhillon, T.R. Marsh

A&A 2006

<http://arxiv.org/pdf/astro-ph/0605196v1.pdf>

5 - W-limb activity

Solar Energetic Particle Events with Protons Above 500 MeV Between 1995 and 2015 Measured with SOHO/EPHIN

P. **Kühl**, N. Dresing, B. Heber, A. Klassen
Solar Physics January 2017, 292:10
<http://link.springer.com/article/10.1007/s11207-016-1033-8>

6 - CH

++17:40 UT: very clear and fast halo CME, backside!

7 - CH

+17:20 UT: W halo CME, backside!

Searching for neutrinos from solar flares across solar cycles 23 and 24 with the Super-Kamiokande detector as a **Review**

K. **Okamoto**, [K. Abe](#), [Y. Hayato](#), [K. Hiraide](#), [K. Hosokawa](#), [K. Ieki](#), [M. Ikeda](#), [J. Kameda](#),++++++
ApJ 2022

<https://arxiv.org/pdf/2210.12948.pdf>

8 - .. : CH and structures inside

9 - CH and structures inside

+ 06:30 UT: SE Halo CME, backside!

Charge States and FIP Bias of the Solar Wind from Coronal Holes, Active Regions, and Quiet Sun

Hui **Fu**, Maria Madjarska, Bo Li, Zhenghua Huang, Zhipeng Wangguan
ApJ 2017

<https://arxiv.org/pdf/1701.07610v1.pdf>

10 - CH and structures inside

+11 - CH and structures inside

+02:40 UT: SW Halo CME, backside!

+13:40 UT: W M1.6 flare, eruption, See Events!

Can Type III Radio Storms be a Source of Seed Particles to Shock Acceleration?

Nat **Gopalswamy**, [Sachiko Akiyama](#), [Pertti Mäkelä](#), [Seiji Yashiro](#), [Hong Xie](#)
Proc. 3rd URSI AT-AP-RASC, Gran Canaria, 29 May to 3 June 2022, 2022
<https://arxiv.org/ftp/arxiv/papers/2205/2205.15233.pdf>

Вспышки, выбросы, протонные события

А.В. **Белов**

Геомагн. и аэрономия 2016 File

12 - CH and structures inside

+11 UT: clear Halo CME, backside!

Return of the 1st of three ARs

++13 - CH and structures inside

+05 UT: E-limb M1.6 impulsive flare

++09:30 UT: E-limb M1.4 LDE flare; spectacular global coronal wave;
interesting type II burst at our spectrum.

THERMAL TO NONTHERMAL ENERGY PARTITION AT THE EARLY RISE PHASE OF SOLAR FLARES

Alexander A. Altyntsev¹, Gregory D. Fleishman^{2,3}, Sergey V. Lesovoi¹, and Nataliia S. Meshalkina
2012 ApJ 758 138

Several papers in Space Sci. Rev., 159, 2011

Speed Distributions of Merging X-Ray Sources During Chromospheric Evaporation in Solar Flares

Zongjun [Ning](#)

Solar Physics, Volume 273, Number 1, 81-92, 2011

Investigation of the Neupert Effect in the Various Intervals of Solar Flares

Zongjun [Ning](#) · Wenda Cao

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Solar Flares as Natural Particle Accelerators: A High-energy View from X-ray Observations and Theoretical Models

Wei [Liu](#)

2008; [File of the book](#)

Characteristics of Solar Flare Hard X-ray Emissions: Observations and Models, Thesis, RHESSI, Wei Liu, E-print, Dec 2006, [file](#)

14- CH

15 - 17:30 UT: large W CME

de Koning, Curt A.; Steinberg, John T.; Gosling, J. T.; Reisenfeld, Daniel B.; Skoug, Ruth M.; St. Cyr, O. C.; Malayeri, M. L.; Balogh, Andr ; Rees, Adam; McComas, D. J.

An unusually fast interplanetary coronal mass ejection observed by Ulysses at 5 AU on 15 November 2003

J. Geophys. Res., Vol. 110, No. A1, A01102

<http://dx.doi.org/10.1029/2004JA010645>

16 - E- and W-limb activity

Noise storm

Impacts on Cosmic-Ray Intensity Observed During Geomagnetic Disturbances

Binod [Adhikari](#), Nirakar Sapkota, Prashrit Baruwal, Narayan P. Chapagain, Carlos Roberto Braga
[Solar Physics](#) October 2017, 292:149

++17 - ++09UT: M4 flare, partial halo CME, nice 4-line channeled dimmings; See Events!!

Our type II burst

Return of two other ARs

Extreme solar storms based on solar magnetic field

Brigitte [Schmieder](#)

Varsiti Conference in Varna June 2016

2017

<https://arxiv.org/pdf/1708.01790.pdf>

File

++18 - Activity from two ribbon flares

++07:50, 10:11 UT: M3.3, M4.5 flares, two large CMEs (halo), nice coronal wave and 4-line channeled dimmings; See Events!!

Our spectacular type II burst

Grechnev, CESRA-13, Presentation

Гречнев, ИКИ-13, Презентация

Distribution and Recovery Phase of Geomagnetic Storms During Solar Cycles 23 and 24

Wageesh [Mishra](#), [Preity Sukla Sahani](#), [Soumyaranjan Khuntia](#), [Dibyendu Chakrabarty](#)

MNRAS 2024

<https://arxiv.org/pdf/2404.09234.pdf>

Double Superposed Epoch Analysis of Geomagnetic Storms and Corresponding Solar Wind and IMF in Solar Cycles 23 and 24

V. [Manu](#), [N. Balan](#), [Qing-He Zhang](#), [Zan-Yang Xing](#)

Space Weather [Volume21, Issue3](#) e2022SW003314 2023

<https://doi.org/10.1029/2022SW003314>

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Space weather: the solar perspective -- an update to Schwenn (2006)

Review

[Manuela Temmer](#)

Living Reviews in Solar Physics 2021

<https://arxiv.org/pdf/2104.04261.pdf>

Recent Results on the Fine Structure in Cosmic Radio Emission

Book

Zebra Pattern in Solar and Pulsar Radio Emission

G.P. [Chernov](#), V. Fomichev, S. Fainshtein

LAP LAMBERT Academic Publishing 2021 File

Termination shock as a source of unusual solar radio bursts

[Valery Fomichev](#), [Gennady Chernov](#)

2020

<https://arxiv.org/ftp/arxiv/papers/2008/2008.06105.pdf>

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C. [Xing](#), [X. Cheng](#), [Jiong Qiu](#), [Qiang Hu](#), [E. R. Priest](#), [M. D. Ding](#)

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Modelling Quasi-Periodic Pulsations in Solar and Stellar Flares

Review

J. A. [McLaughlin](#), V. M. Nakariakov, M. Dominique, P. Jelínek, S. Takasao

[Space Science Reviews](#) February 2018, 214:45

<https://link.springer.com/content/pdf/10.1007%2Fs11214-018-0478-5.pdf>

РАДИАЛЬНЫЕ РАСПРЕДЕЛЕНИЯ ВЕЛИЧИНЫ МАГНИТНОГО ПОЛЯ В СОЛНЕЧНОЙ КОРОНЕ, ПОЛУЧЕННЫЕ С ИСПОЛЬЗОВАНИЕМ СВЕДЕНИЙ О БЫСТРЫХ ГАЛО-КВМ

[ФАЙНШТЕЙН В.Г.1](#), [ЕГОРОВ Я.И.](#)

Том: 4Номер: [1](#) Год: **2018** Страницы: 3-13 **File**
(See <https://arxiv.org/pdf/1712.09046.pdf>)

Coronal magnetic field value radial distributions obtained by using the information on fast halo coronal mass ejections

V.G.[Fainshtein](#), [Ya.I.Egorov](#)

Solar Phys. **2017**

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M. [Chandorkar](#), E. Camporeale, S. Wing

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Extreme solar storms based on solar magnetic field

Brigitte [Schmieder](#)

Varsiti Conference in Varna June 2016 **2017**

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Review on Current Sheets in CME Development: Theories and Observations

Jun [Lin](#), Nicholas A. Murphy, Chengcai Shen, John C. Raymond, Katharine K. Reeves, Jiayong Zhong, Ning Wu, Yan Li

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Guohui [Du](#), Xiangliang Kong, Yao Chen, Shiwei Feng, Bing Wang, Gang Li

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The Roles of Reconnected Flux and Overlying Fields in CME Speeds

Minda [Deng](#), Brian T. Welsch

2015

<http://arxiv.org/pdf/1504.02905v1.pdf>

Particle Acceleration in Plasmoid Ejections Derived from Radio Drifting Pulsating Structures

N. [Nishizuka](#)¹, M. Karlický², M. Janvier³, and M. Bárta

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Interacting CMEs and their associated flare and SEP activities

A. [Shanmugaraju](#), S. Prasanna Subramanian

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Solar Energetic Particles and Associated EIT Disturbances in Solar Cycle 23

R. [Miteva](#), K.-L. Klein, I. Kienreich, M. Temmer, A. Veronig, O. E. Malandraki

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A Challenging Solar Eruptive Event of [18 November 2003](#) and the Causes of the 20 November Geomagnetic Superstorm.

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V.V. **Grechnev**, A.M. Uralov, I.M. Chertok, V.A. Slemzin, B.P. Filippov, Ya.I. Egorov, V.G. Fainshtein, A.N. Afanasyev, N.P. Prestage, M. Temmer
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High rigidity Forbush decreases: due to CMEs or shocks?

Arun **Babu**, H. M. Antia, S. R. Dugad, S. K. Gupta, Y. Hayashi, S. Kawakami, P. K. Mohanty, T. Nonaka, A. Oshima, P. Subramanian
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U. **Bak-Steslicka**, S. Kolomanski, T. Mrozek
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Sijie **Yu**, Yihua Yan, and Baolin Tan
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Presence of solar filament plasma detected in interplanetary coronal mass ejections by in situ spacecraft

Rahul **Sharma**^{1,*} and Nandita Srivastava²
J. Space Weather Space Clim. 2 (**2012**) A10
<http://www.swsc-journal.org/articles/swsc/pdf/2012/01/swsc120018.pdf>

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Y. **Cerrato**, E. Saiz, C. Cid, , W.D. Gonzalez, J. Palacios
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Brigitte **Schmieder**, , Guillaume Aulanier
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Magnetic-topology evolution in NOAA AR 10501 on 2003 November 18

A.V. **Oreshina**, I.V. Oreshina, and B.V. Somov
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I.V. **Oreshina**¹ and B.V. Somov¹
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Geometry of the 20 November 2003 Magnetic Cloud

Katsuhide [Marubashi](#), Kyung-Suk Cho, Yeon-Han Kim, Yong-Deuk Park, and Sung-Hong Park
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U. [Bak-St.e'slicka](#) · T. Mrozek · S. Kołoma'nski
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Multiwavelength Study on Solar and Interplanetary Origins of the Strongest Geomagnetic Storm of Solar Cycle 23

Pankaj [Kumar](#)¹ · P.K. Manoharan² · Wahab Uddin³
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Actors of the main activity in large complex centres during the 23 solar cycle maximum

B. [Schmieder](#) ^{a,*}, P. Dermoulin ^a, E. Pariat ^a, T. ToËroËk ^{a,1}, G. Molodij ^a, C.H. Mandrini ^b, S. Dasso ^b, R. Chandra ^c, W. Uddin ^d, P. Kumar ^d, P.K. Manoharan ^e, P. Venkatakrishnan ^f, N. Srivastava
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A.T.Y. [Lui](#)
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A STATISTICAL STUDY OF THE POST-IMPULSIVE-PHASE ACCELERATION OF FLARE-ASSOCIATED CORONAL MASS EJECTIONS

X. [Cheng](#)¹, J. Zhang^{1,2}, M. D. Ding¹, and W. Poomvises²
Astrophysical Journal, 712:752–760, **2010** March, [File](#)

E-limb flare

How can a Negative Magnetic Helicity Active Region Generate a Positive Helicity Magnetic Cloud ?

R. [Chandra](#) · E. Pariat · B. Schmieder · C.H. Mandrini · W. Uddin ·
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Temporal comparison of nonthermal flare emission and magnetic-flux change rates:

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Morphology and density structure of post-CME current sheets

B. [Vrsnak](#)¹, G. Poletto², E. Vujić³, A. Vourlidas⁴, Y.-K. Ko⁴, J. C. Raymond⁵, A., Ciaravella⁶, T. Zic¹, D. F. Webb⁷, A. Bemporad⁸, F. Landini⁹, G. Schettino⁹, C., Jacobs¹⁰, and S. T. Suess¹¹
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E-limb flare

Source region of the 18 November 2003 coronal mass ejection that led to the strongest magnetic storm of cycle 23

Srivastava, Nandita; Mathew, Shibu K.; Louis, Rohan E.; Wiegelmann, Thomas
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J. **Lin**^{1,2}, J. Li³, Y.-K. Ko², and J. C. Raymond²
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E-limb event

Forbush decreases and turbulence levels at CME fronts

Prasad **Subramanian**, H. M. Antia, S. R. Dugad, U. D. Goswami, S. K. Gupta, Y. Hayashi, N. Ito, S. Kawakami, H. Kojima, P. K. Mohanty, P. K. Nayak, T. Nonaka, A. Oshima, K. Sivaprasad, H. Tanaka, S. C. Tonwar
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<http://solar.physics.montana.edu/cgi-bin/eprint/index.pl?entry=8571>

Two-spacecraft reconstruction of a magnetic cloud and comparison to its solar source

C. **M€ostl**^{1,2}, C. Miklenic¹, C.J. Farrugia³, M. Temmer^{2,4}, A. Veronig¹, A.B. Galvin³, B. Vršnak⁴, and H.K. Biernat^{1,2}
E-print, Jan 2008, **File**; Ann. Geophys. 26, 3139–3152, **2008**, **File**
We use observations from space missions SOHO and TRACE together with ground-based data to study the magnetic structure of the active region NOAA 10501 containing a highly curved filament, and determine the reconnection rates and fluxes in an M4 flare on 18 November 2003 which is associated with a fast halo CME.

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ON THE MAGNETIC FLUX BUDGET IN LOW-CORONA MAGNETIC RECONNECTION AND INTERPLANETARY CORONAL MASS EJECTIONS

Jiong **Qiu**,¹ Qiang Hu,² Timothy A. Howard,¹ and Vasyl B. Yurchyshyn³
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"Bursty" Reconnection Following Solar Eruptions: MHD Simulations and Comparison with Observations

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of “rays,” which have been interpreted as being coincident with the current sheet at the reconnection site underneath the erupting CME, also provide evidence for its occurrence. “Blobs” occasionally seen within these rays suggest an even richer level of structure. In this report, we present numerical simulations that reproduce both the observed rays and the formation and evolution of the blobs.

E-limb event

A Study of the Orientation of Interplanetary Magnetic Clouds and Solar Filaments

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CORONAS-F/SPIRIT EUV observations of October–November 2003 solar eruptive events in combination with SOHO/EIT data,

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КРУПНОМАСШТАБНАЯ АКТИВНОСТЬ В СОЛНЕЧНЫХ ЭРУПТИВНЫХ СОБЫТИЯХ ОКТЯБРЯ–НОЯБРЯ 2003 г. ПО ДАННЫМ SOHO/EIT

И. М. **Черток**¹, В. В. Гречнев²
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I. M. **CHERTOK***, V. V. FOMICHEV, A. A. GNEZDILOV, R. V. GORGUTSA, A. K. MARKEEV and D. E. SOBOLEV
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Solar source of the largest geomagnetic storm of cycle 23

N. **Gopalswamy**¹, S. Yashiro^{1,2}, G. Michalek, H. Xie^{1,2}, R. P. Lepping¹, and R. A. Howard³
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CORONAS-F/SPIRIT EUV observations of October–November 2003 solar eruptive events in combination with SOHO/EIT data

V. V. **Grechnev**,¹ I. M. Chertok,² V. A. Slemzin,³ S. V. Kuzin,³ A. P. Ignat’ev,³ A. A. Pertsov,³ I. A. Zhitnik,³ J.-P. Delaboudin`re,⁴ and F. Auchere⁴
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E-limb event

Structure of magnetic fields in NOAA active regions 0486 and 0501 and in the associated interplanetary ejecta
Vasyl **Yurchyshyn**, Qiang Hu, Valentyna Abramenko
Space Weather v..3, No. 8, S08C02, 10.1029/2004SW000124, **2005**, **File**.

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++ 19 - ++08 UT: significant central eruption, large N CME and dimming; See Events!!
!(remake at 171, 284, 304)

SYMPATHETIC FILAMENT ERUPTIONS CONNECTED BY CORONAL DIMMINGS
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19-22 Nov

Storms ($\Delta SYM-H \leq -200$ nT) with the Burton Equation or the O'Brien and McPherron Equation?
Ming-Xian **Zhao**^{1,2}, Gui-Ming Le^{1,2}, and Jianyong Lu³
2022 ApJ 928 18
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The determination of satellite orbital decay from POD data during geomagnetic storms
Ruoxi Li, **Jiuhou Lei**
Space Weather e2020SW002664 **2021**
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<https://agupubs.onlinelibrary.wiley.com/doi/epdf/10.1029/2020SW002664>

Thermosphere modeling capabilities assessment: geomagnetic storms

Sean **Bruinsma**^{1*}, Claude Boniface¹, Eric K. Sutton² and Mariangel Fedrizzi³

J. Space Weather Space Clim. **2021**, 11, 12

<https://www.swsc-journal.org/articles/swsc/pdf/2021/01/swsc200061.pdf>

++20 November 2003

- Activity from three regions

++02:12 UT: central impulsive M1.4 flare, propagating dimmings and disturbances; See Events!!

++07:45 UT: central M9.6 very impulsive flare, CME, dimmings, disturbances;
(similar to 02:12 UT) See Events!!

++19:30 UT: NE quasi-impulsive S8.6 flare, dimmings; See Events!!

++23:50: central M5.8 very impulsive flare, dimmings, disturbances;
(similar to 07:45 UT), See Events!!

!!Very strong geomagnetic storm Dst~-422 nT!!

Strong Relativistic Electron Flux Events in GPS Orbit

Nigel P. **Meredith**, **Thomas E. Cayton**, **Michael D. Cayton**, **Richard B. Horne**

Space Weather [Volume22, Issue12](#) December **2024** e2024SW004042

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The role of extreme geomagnetic storms in the Forbush decrease profile observed by neutron monitors

Ghag, K ; Tari, P ; Raghav, A ; +++

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<https://arxiv.org/pdf/2112.09918.pdf>

The Possible Cause of Most Intense Geomagnetic Superstorm of the 21st Century on 20 November 2003

Anil **Raghav**, **Zubair Shaikh**, **P. Vemareddy**, **Ankush Bhaskar**, **Omkar Dhamane**, **Kalpesh**

Ghag, **Prathmesh Tari**, **Baiju Dayanandan** & **Badar Mohammed Al Suti**

Solar Physics volume 298, Article number: 64 (**2023**)

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Multi-Hour-Ahead Dst Index Prediction Using Multi-Fidelity Boosted Neural Networks

A. **Hu**, **E. Camporeale**, **B. Swiger**

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A Time-Efficient, Data Driven Modelling Approach To Predict The Geomagnetic Impact of Coronal Mass Ejections

Souvik **Roy**, **Dibyendu Nandy**

GRL **2022**

<https://arxiv.org/pdf/2210.00071.pdf>

The role of extreme geomagnetic storms in the Forbush decrease profile

Anil **Raghav**, **Prathmesh Tari**, **Kalpesh Ghag**, **Zubair Shaikh**, **Omkar Dhamane**, **Utsav Panchal**, **Mayuri Katvankar**, **Komal Chorghahe**, **Digvijay Mishra**, **Kishor Kumbhar**

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Origination of Extremely Intense South Component of Magnetic Field ($B_{s\theta}$) in the ICME

Chenglong **Shen**, Yutian Chi, Mengjiao Xu, and Yuming Wang
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<https://doi.org/10.3389/fphy.2021.762488>

КОСМИЧЕСКАЯ ПОГОДА: ФАКТОРЫ РИСКА ДЛЯ ГЛОБАЛЬНЫХ НАВИГАЦИОННЫХ СПУТНИКОВЫХ СИСТЕМ

Review

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M. I. **Sitnov**, G. K. Stephens, N. A. Tsyganenko, H. Korth, E. C. Roelof, P. C. Brandt, V. G. Merkin, A. Y. Ukhorskiy

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Capability of Geomagnetic Storm Parameters to Identify Severe Space Weather

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Satellite orbital drag during magnetic storms

D. M. **Oliveira**, E. Zesta

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S. **Krauss**, M. Temmer, A.M. Veronig, O. Baur, H. Lammer

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A Challenging Solar Eruptive Event of 18 November 2003 and the Causes of the 20 November Geomagnetic Superstorm. IV. Unusual Magnetic Cloud and Overall Scenario

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N. **Balan**^{1,2,6,*}, R. Skoug³, S. Tulasi Ram⁴, P. K. Rajesh², K. Shiokawa¹, Y. Otsuka¹, I. S. Batista⁵, Y. Ebihara⁶ and T. Nakamura⁷
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Brigitte **Schmieder**, , Guillaume Aulanier

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Factors Affecting The Intensity of Solar Energetic Particle Events

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Homologous Flares and Magnetic Field Topology in Active Region NOAA 10501 on

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FILAMENT INTERACTION MODELED BY FLUX ROPE RECONNECTION

T. **Torok**^{1,2}, R. Chandra^{1,3}, E. Pariat¹, P. D´emoulin¹, B. Schmieder¹, G. Aulanier¹, M. G. Linton⁴, and C. H. Mandrini⁵

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EVOLUTION OF SOLAR MAGNETIC FIELD AND ASSOCIATED MULTIWAVELENGTH PHENOMENA: FLARE EVENTS ON 2003 NOVEMBER 20

Pankaj **Kumar**¹, P. K. Manoharan² and Wahab Uddin¹

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CME Interaction with Coronal Holes and their Interplanetary Consequences

N. **Gopalswamy**¹, P. Makela^{1,2}, H. Xie^{1,2}, S. Akiyama^{1,2}, and S. Yashiro^{1,2}

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20-22

Estimating satellite orbital drag during historical magnetic superstorms

Denny M. **Oliveira** , [Eftyhia Zesta](#) , [Hisashi Hayakawa](#) , [Ankush Bhaskar](#)

Space Weather 2020

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Geoeffective Properties of Solar Transients and Stream Interaction Regions **Review**

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Operational Dst index prediction model based on combination of artificial neural network and empirical model **Wooyeon**

Park^{1,2,3}, Jaejin Lee^{3,4,*}, Kyung-Chan Kim⁵,

J. Space Weather Space Clim. **2021**, 11, 38

<https://www.swsc-journal.org/articles/swsc/pdf/2021/01/swsc200062.pdf>

<https://doi.org/10.1051/swsc/2021021>

21 - 26: Low activity. No events. Chains.

++27 - 08:20 UT: SW C9.6 LDE from AR 508(486), dimmings,
slow CME without metric radio; See Events!

28 Nov

Charge States and FIP Bias of the Solar Wind from Coronal Holes, Active Regions, and Quiet Sun

Hui **Fu**, Maria Madjarska, Bo Li, Zhenghua Huang, Zhipeng Wanguan

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<https://arxiv.org/pdf/1701.07610v1.pdf>

29 Nov

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28 - 30: Low activity. No events. Chains.

++29-30: Clear chains; Illustration!!