

Introduction to the Activity. Structure of the TI / Monograph

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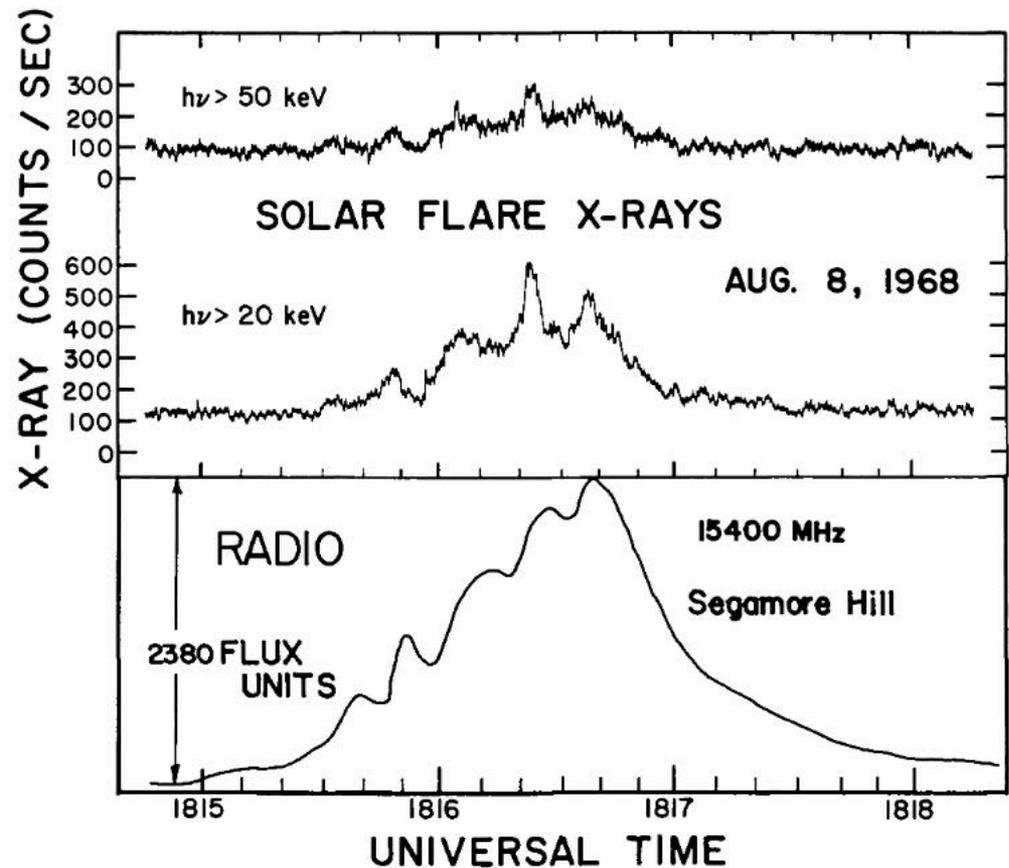
The 50th anniversary of the first detection of QPP in a solar flare

THE ASTROPHYSICAL JOURNAL, Vol. 155, February 1969

SIXTEEN-SECOND PERIOD CORRELATED MICROWAVE EMISSION I

G. K. PARSONS
School of Physics and Astronomy
Received

The solar X-ray event of August 8, 1968
modulation in the X-ray intensity-time profiles
features in microwave radio-emission data. The
energy discriminator hardens during peaks of



1969ApJ...155L.117P

- The main outcome of our work this week and of the next 6 months is a series of review papers in ***Space Science Reviews*** (IF 9.327). Every review paper will be fully reviewed.
- *There will be 7 papers, each about 50 pages long.*
- The review papers will be combined in an ***ISSI monograph*** by Springer Verlag
(see www.issibern.ch/publications)
- The expected submission date: six months after the workshop, i.e., **19 April 2020**.

Specific reviews/chapters and the first co-authors:

1. Novel techniques in coronal seismology data analysis (**Sergey Anfinogentov**)
2. Kink oscillations and waves in the corona (**?Valery Nakariakov**)
3. Slow waves in coronal loops (**Tongjiang Wang**)
4. MHD waves in open coronal structures (**Dipankar Banerjee**)
5. Quasi-periodic pulsations in solar and stellar flares (**Ivan Zimovets**)
6. Sausage oscillations and waves in the corona (**Bo Li**)
7. Coronal heating by MHD waves (**Tom Van Doorselaere**)

Every participant is welcome to co-author as many reviews/chapters as he/she is able to effectively contribute to.

The reviews will cover a wide range of topics related to solar and stellar coronal physics:

- Seismology of coronal plasma structures;
- Novel data analysis techniques, addressing the intrinsically non-stationary nature of the observed oscillatory patterns;
- The similarity of quasi-periodic pulsations detected in solar and stellar flares, and its importance for revealing the mechanisms for those pulsations and the energy releases;
- Nonlinear effects: manifestation in observations and theoretical modelling;
- Complementarity and successful exploitation of multi-instrumental and multi-wavelength observations;
- Future directions for observations and modelling.

Mainly addressing the results obtained since 2009.

This work will capitalise on the experience gained in writing and editing the Topical Issue “Solar Coronal Seismology” of *Space Science Reviews* **149**, 2009

- 13 review papers (average length ~30 pages)
- with the average citation of 77 times per paper (NASA ADS)



ReviewPaper

Coronal Seismology by Means of Kink Oscillation Overtones

J. Andries, T. Van Doorselaere, B. Roberts, G. Verth...

Pages 3-29



ReviewPaper

The 3D Geometry, Motion, and Hydrodynamic Aspects of Oscillating Coronal Loops

Markus J. Aschwanden

Pages 31-64



OriginalPaper

Longitudinal Waves in Coronal Loops

I. De Moortel

Pages 65-81



ReviewPaper

Equivalent Electric Circuit Models of Coronal Magnetic Loops and Related Oscillatory Phenomena on the Sun

Maxim L. Khodachenko, Valerii V. Zaitsev, Albert G. Kislyakov...

Pages 83-117



OriginalPaper

Quasi-Periodic Pulsations in Solar Flares

V. M. Nakariakov, V. F. Melnikov

Pages 119-151

 OriginalPaper

Progress, Challenges, and Perspectives of the 3D MHD Numerical Modeling of Oscillations in the Solar Corona

Leon Ofman

Pages 153-174

 OriginalPaper

Prominence Seismology Using Small Amplitude Oscillations

Ramón Oliver

Pages 175-197

 OriginalPaper

Transverse Oscillations of Coronal Loops

Michael S. Ruderman, Robert Erdélyi

Pages 199-228

 ReviewPaper

Heating Diagnostics with MHD Waves

Y. Taroyan, R. Erdélyi

Pages 229-254

 ReviewPaper

Excitation of Standing Kink Oscillations in Coronal Loops

Jaume Terradas

Pages 255-282

 ReviewPaper

Large Amplitude Oscillations in Prominences

D. Tripathi, H. Isobe, R. Jain

Pages 283-298

 ReviewPaper

The Effect of Loop Curvature on Coronal Loop Kink Oscillations

Tom Van Doorselaere, Erwin Verwichte, Jaume Terradas

Pages 299-324

 ReviewPaper

EIT Waves: A Changing Understanding over a Solar Cycle

M. J. Wills-Davey, G. D. R. Attrill

Pages 325-353

 ReviewPaper

Oscillations and Waves in Solar Spicules

T. V. Zaqarashvili, R. Erdélyi

Pages 355-388

Several other recent review papers:

- Arregui, I., “*Bayesian coronal seismology*”, Adv. Space Res. **61**, 655, 2018.
- Banerjee, D, Gupta, GR, Teriaca, L., “*Propagating MHD waves in coronal holes*”, Space Sci. Rev. **158**, 267, 2011.
- De Moortel, I, Browning, P., “*Recent advances in coronal heating*”, Philos. Trans. R. Soc. Lond. Ser. A 373, 20140269, 2015.
- De Moortel, I, Nakariakov, VM., “*Magnetohydrodynamic waves and coronal seismology: an overview of recent results*”, Philos. Trans. R. Soc. Lond. Ser. A **370**, 3193, 2012.
- Liu, W., Ofman, L., “*Advances in Observing Various Coronal EUV Waves in the SDO Era and Their Seismological Applications*”, Solar Phys. 289, 3233, 2014
- McLaughlin, J. A., Nakariakov, V. M., Dominique, M., Jelínek, P., Takasao, S., “*Modelling quasi-periodic pulsations in solar and stellar flares*”, Space Sci. Rev. **214**, 45, 2018.
- Reale, F. “*Coronal loops: observations and modeling of confined plasma*”, Living Rev. Solar Phys. **11**, 4, 2014.
- Van Doorselaere, T, Kupriyanova, EG, Yuan, D., “*Quasi-periodic pulsations in solar and stellar flares: an overview of recent results*”, Solar Phys. **291**, 3143, 2016.
- Wang, T., “*Standing slow-mode waves in hot coronal loops: observations, modeling, and coronal seismology*”, Space Sci. Rev. **158**, 397, 2011.

Annual. Rev. Astron. & Astrophys. (in peer review)

Magnetohydrodynamic Waves in the Solar Corona

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