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Innovative publishing of state-of-the-art articles: The concept of ***Living Reviews***

Political Science

Connecting Excellence on European Governance

Patrick Scherhaufer

e-mail: patrick.scherhaufer@ihs.ac.at

OVERVIEW

- What is a Living Review article?
- The Living Reviews family: Who are we?
- Editorial Concept
- Online Features
- Living Reviews in the Social Sciences
- Conclusions: Hints for future „cyber-activists“

Patrick Scherhaufer

http://www.ihs.ac.at
patrick.scherhaufer@ihs.ac.at

What is a Living Review (LR) article?

What is a LR?

- state-of-the-art article
- commentary on the
  - evolution;
  - achievements; and
  - gaps.

What is a LR not?

- a student textbook
- a yearbook
- a bibliographic survey
- a contribution to an encyclopaedia
- a standard journal article or book chapter

Patrick Scherhaufer

http://www.ihs.ac.at
patrick.scherhaufer@ihs.ac.at

The Living Reviews Family

LIVING REVIEWS *in relativity*

--> online since 1998

--> 67 Reviews published

LIVING REVIEWS *in solar physics*

--> online since 2003

--> 10 Living Reviews published

LIVING REVIEWS *in european governance*

--> online since 2005

--> first Living Reviews to be published in May 2006

Visibility / Journal Usage

LIVING REVIEWS *in relativity*	2002	2003	2004	2005
average # article download / month	900	1800	3900	5200
# e-mail subscribers	625	670	705	750

LIVING REVIEWS *in solar physics*	-	-	2004	2005
average # article download / month			200	790
# e-mail subscribers			80	160

Patrick Scherhaufer

http://www.ihs.ac.at
patrick.scherhaufer@ihs.ac.at

Editorial Concept

- An international Editorial Board
- commission articles from well-known experts in the fields,
- and classical peer review mechanism are applied before an article is published.

Patrick Scherhaufer

http://www.ihs.ac.at
patrick.scherhaufer@ihs.ac.at

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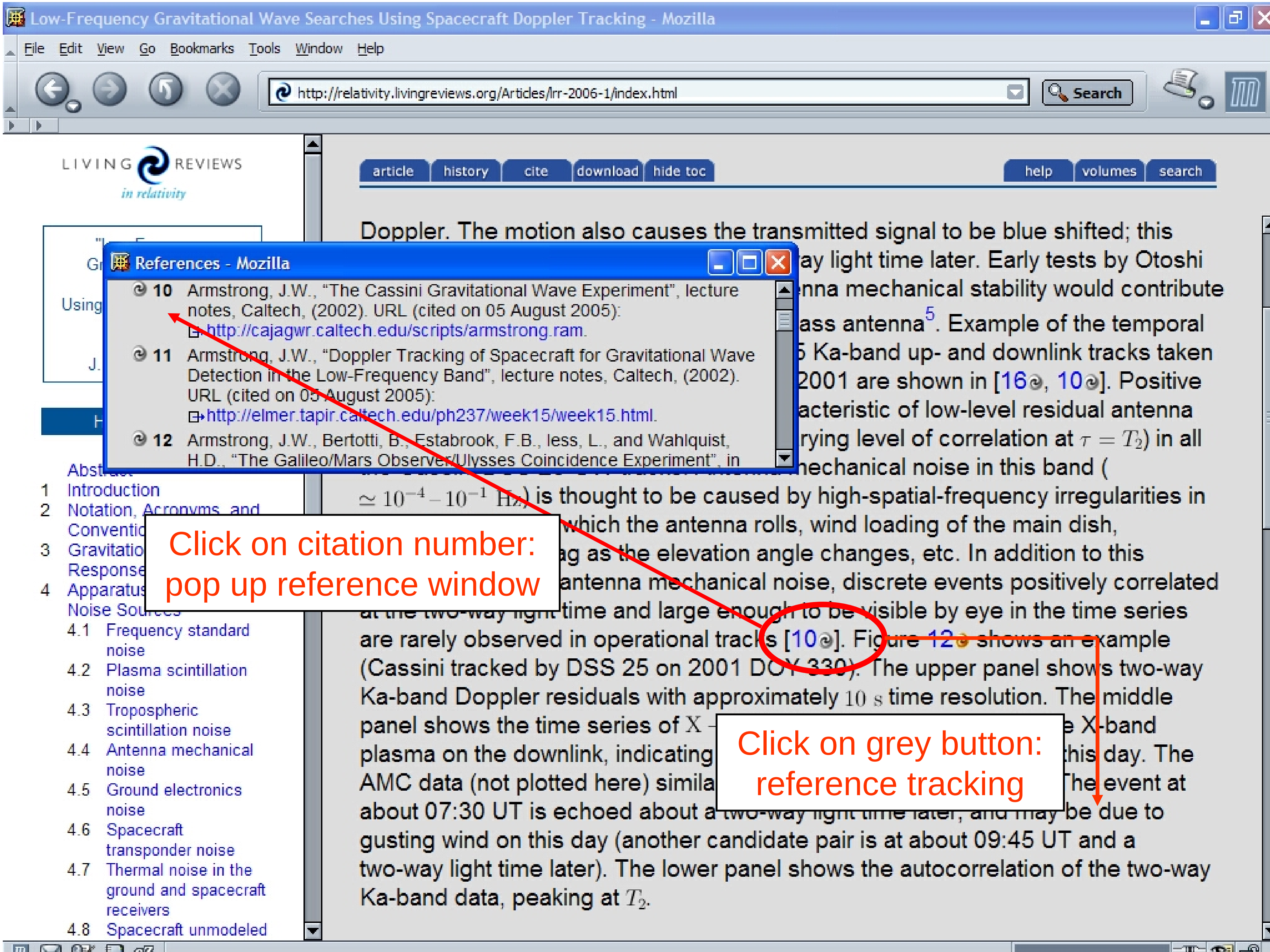
Low-Frequency Gravitational Wave Searches Using Spacecraft Doppler Tracking

J. W. Armstrong
Jet Propulsion Laboratory
California Institute of Technology
Mail Stop 238-725, 4800 Oak Grove Dr.
Pasadena, CA 91109-8001, U.S.A.
John.W.Armstrong@jpl.nasa.gov

Abstract

This paper discusses spacecraft Doppler tracking, the current-generation detector technology used in the low-frequency (~millihertz) gravitational wave band. In the Doppler method the earth and a distant spacecraft act as free test masses with a ground-based precision Doppler tracking system continuously monitoring the earth-spacecraft relative dimensionless velocity $2\Delta v/c = \Delta\nu/\nu_0$, where $\Delta\nu$ is the Doppler shift and ν_0 is the radio link carrier frequency. A gravitational wave having strain amplitude h incident on the earth-spacecraft system causes perturbations of order h in the time series of $\Delta\nu/\nu_0$. Unlike other detectors, the $\sim 1-10$ AU earth-spacecraft separation makes the detector large compared with millihertz-band gravitational wavelengths, and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12 Armstrong, J.W., Bertotti, B., Estabrook, F.B., Iess, L., and Wahlquist, H.D., "The Galileo/Mars Observer/Ulysses Coincidence Experiment", in
Doppler. The motion also causes the transmitted signal to be blue shifted; this
are rarely observed in operational tracks [10]. Figure 12 shows an example (Cassini tracked by DSS 25 on 2001 DOY 330). The upper panel shows two-way Ka-band Doppler residuals with approximately 10 s time resolution. The middle panel shows the time series of X
about 07:30 UT is echoed about a two-way light time later, and may be due to gusting wind on this day (another candidate pair is at about 09:45 UT and a two-way light time later). The lower panel shows the autocorrelation of the two-way Ka-band data, peaking at T_2.
Abstract
1 Introduction
2 Notation, Acronyms, and Conventions
3 Gravitational Response
4 Apparatus Noise Sources
4.1 Frequency standard noise
4.2 Plasma scintillation noise
4.3 Tropospheric scintillation noise
4.4 Antenna mechanical noise
4.5 Ground electronics noise
4.6 Spacecraft transponder noise
4.7 Thermal noise in the ground and spacecraft receivers
4.8 Spacecraft unmodeled
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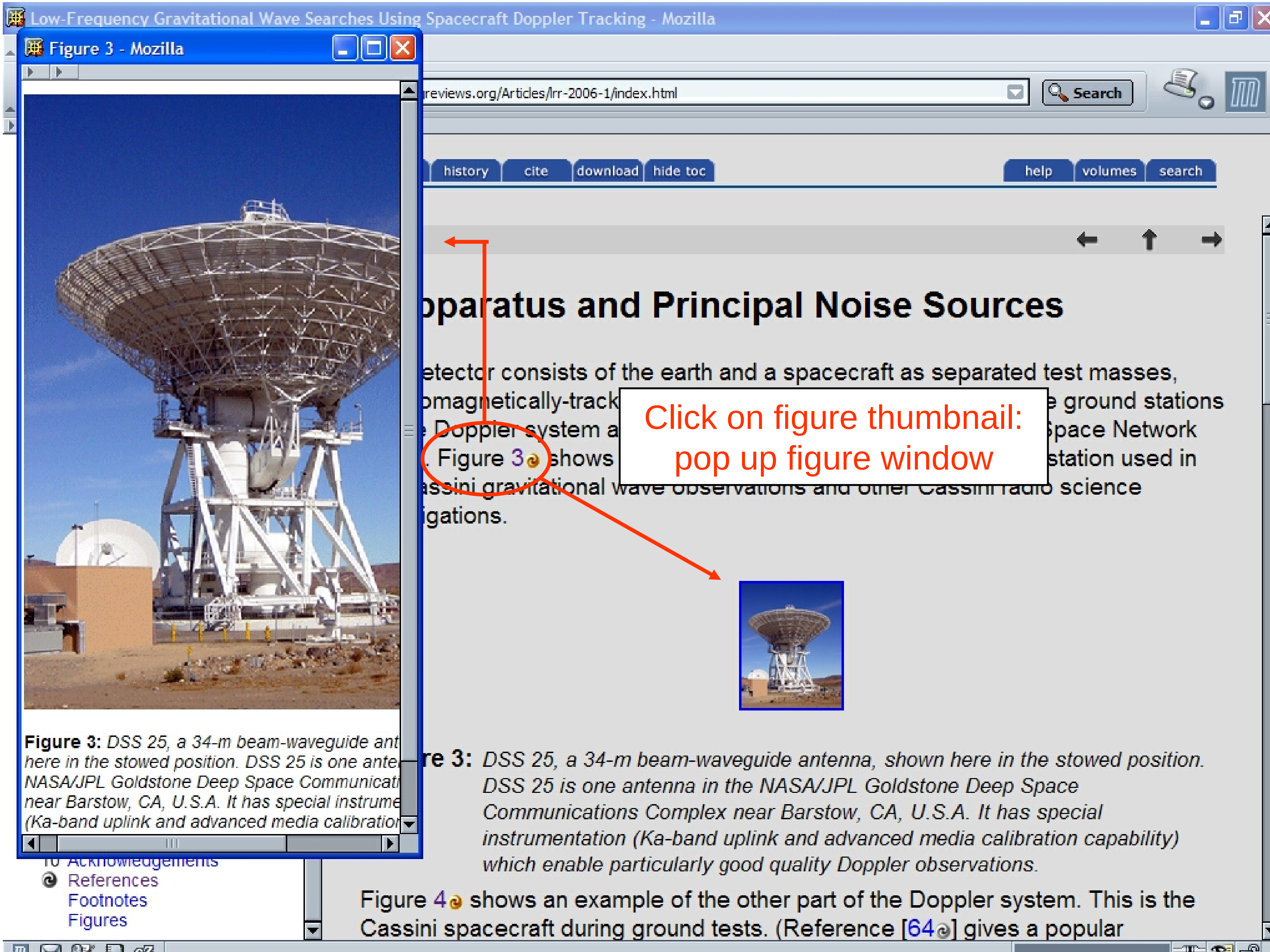
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shows
station used in
assini gravitational wave observations and other Cassini radio science
igations.
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Figure 3: DSS 25, a 34-m beam-waveguide ant
here in the stowed position. DSS 25 is one ante
NASA/JPL Goldstone Deep Space Communicati
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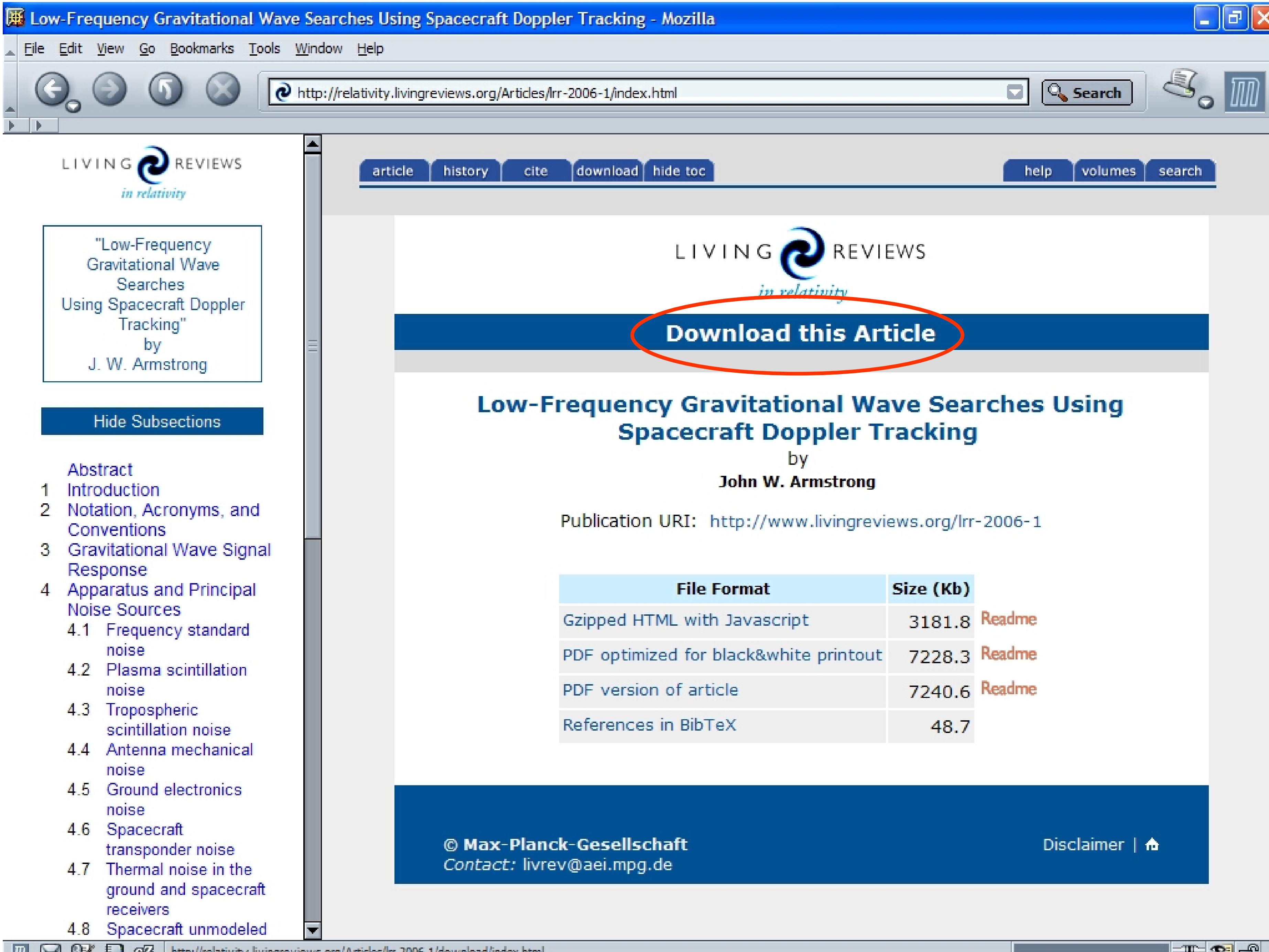
(Ka-band uplink and advanced media calibratio
re 3: DSS 25, a 34-m beam-waveguide antenna, shown here in the stowed position. DSS 25 is one antenna in the NASA/JPL Goldstone Deep Space Communications Complex near Barstow, CA, U.S.A. It has special instrumentation (Ka-band uplink and advanced media calibration capability) which enable particularly good quality Doppler observations.
10 Acknowledgements
References
Footnotes
Figures
Figure 4 shows an example of the other part of the Doppler system. This is the
Cassini spacecraft during ground tests. (Reference [64] gives a popular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3 Gravitational Wave Signal Response
4 Apparatus and Principal Noise Sources
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4.2 Plasma scintillation noise
4.3 Tropospheric scintillation noise
4.4 Antenna mechanical noise
4.5 Ground electronics noise
4.6 Spacecraft transponder noise
4.7 Thermal noise in the ground and spacecraft receivers
4.8 Spacecraft unmodeled
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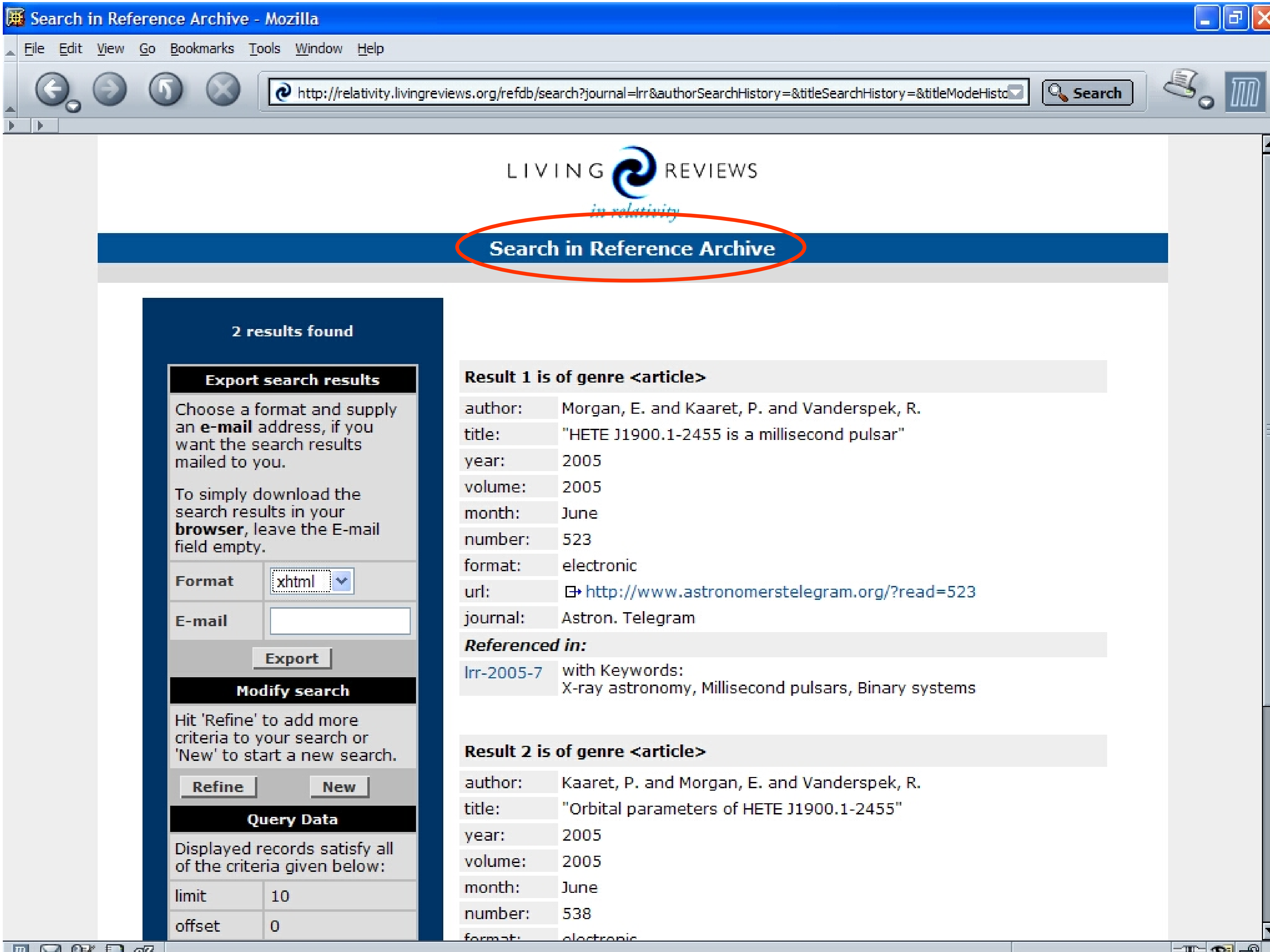
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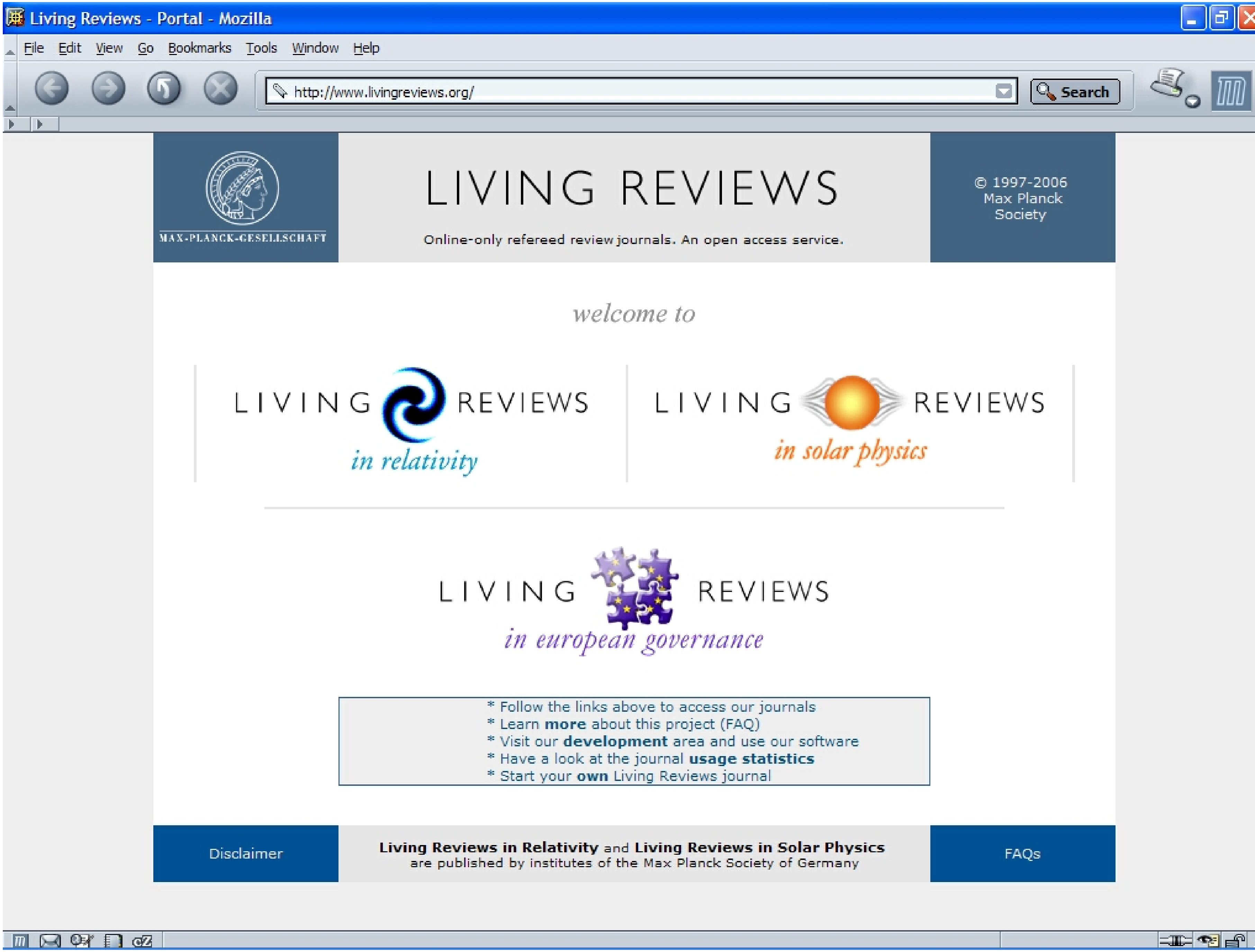
Living Reviews in the Social Sciences

- a rather different publishing ‘culture‘
- introducing a new concept is no trivial task
- different technical infrastructure needed adaptation
- benefits from our experience

Patrick Scherhaufer

http://www.ihs.ac.at
patrick.scherhaufer@ihs.ac.at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Patrick Scherhaufer

http://www.ihs.ac.at
patrick.scherhaufer@ihs.ac.at