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Connections within geospace, *Living With a Star Response Space Weather Conf.*, Boulder, CO (May 2003).

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# Bokulic RS, and Jensen JR

Tone-based commanding of deep space probes using small aperture ground antennas.

## Gemeny SE, and Gemeny MW

Ground system planning for long duration space missions helped by lessons learned resurrecting obsolete computing systems.

#### Gemeny SE, and Gemeny MW

Longevity planning: A cost reduction strategy for ground systems on long duration space missions.

# Knopf W

The TIMED telemetry definition system.

# Packard M, Whichard D, and Clark PJ

Cost reduction through the use of web based applications in the mission operations center.

The following papers were presented at the Joint Discussion on Magnetic Fields and Helicity in the Sun and Heliosphere, Int. Astronomical Union General Assembly, Sydney, Australia (16 Jul 2003):

# Georgoulis MK, Rust DM, and LaBonte BJ

Transport of helicity and dynamics of solar active regions.

### Riley P

Magnetic helicity in filaments, CMEs and magnetic clouds.

# Schmieder B, Demoulin P, Georgoulis M, Rust DM, and Bernasconi PN

Emerging magnetic flux and the heating of coronal loops.

The following papers were presented at the 39th AIAA/ASME/SAE/ ASEE Joint Propulsion Conf. and Exhibit, Huntsville, AL (20–23 Jul 2003):

# Aadland RS, Engelbrecht CS, Ganapathi GB, Browning DA, Wilson F, and Hoskins WA

Xenon propellant management system for 40 cm NEXT ion thruster.

### Moore RC, and McNutt RL Jr

The MESSENGER propulsion system—How it got the way it is.

# Thunnissen DP, Engelbrecht CS, and Weiss JM

Assessing model uncertainty in the conceptual design of a monopropellant propulsion system.

# Wiley S, Dommer K, and Mosher LE

Design and development of the MESSENGER propulsion system.

The following papers were presented at the IEEE Int. Geoscience and Remote Sensing Symp., Toulouse, France (21–25 Jul 2003):

### Horstmann J, KochW, Winstead NS, Monaldo F, Thompson D, Clemente-Colón P, and Pichel W

Comparison of RADARSAT-1 SAR retrieved wind fields to numerical models.

#### Monaldo FM

SEASAT sees the wind with SAR.

# Monaldo FM, Thompson DR, and Winstead NS

Combining SAR and scatterometer data to improve high resolution wind speed retrievals.

Raney RK, Leuschen CJ, Chapman RD, Jensen JR, and Gotwols BL LaRA-2002: Results of the airborne laser and radar altimeter campaign over Greenland, Svalbard and Arctic Sea Ice.

# Raney RK, Smith WHF, Swell DT, Jensen JR, Porter DL, and Reynolds EL

Abyss-lite: Improved bathymetry from a dedicated small satellite delay-Doppler radar altimeter.

# **Thompson DR, Linstrom LA, Gasparovic RF, and Elfouhaily TM** Doppler analysis of GPS reflections from the ocean surface.

The following papers were presented at the 28th Int. Cosmic Ray Conf., Tsukuba, Japan (31 Jul-7 Aug 2003):

# Decker RB, Krimigis SM, Roelof EC, and Hill ME

Angular distributions and energy spectra of energetic particles observed by Voyager 1 at 85–88 AU.

# Hill ME, Hamilton DC, Decker RB, and Krimigis SM Sustained energetic particle intensity enhancements at Voyager 1

beginning in 2002 following the 1999–2001 period of increasing anomalous cosmic ray modulation.

#### Krimigis SM, Decker RB, Roelof EC, and Lario D Energetic particle intensity increases at Voyagers 1 and 2 during 2002–03.

The following papers were presented at the Am. Astronautical Soc./Am. Inst. of Aeronautics and Astronautics (AAS/AIAA) Astrodynamics Specialist Conf., Big Sky, MT (3–7 Aug 2003):

# Haley DR, StrikwerdaTE, and Ailinger KG

Autonomous star tracker development for the New Horizons mission.

# Pittelkau ME Pointing error definitions, metrics, and algorithms. Sharer PI

Separation analysis for the STEREO mission.

The following papers were presented at the Joint Assembly of the European Geophys. Soc., Am. Geophys. Union, and European Union of Geosci., Nice, France (7–11 Apr 2003):

### Crowley G, Paxton LJ, Christensen A, Morrison D, Zhang Y, Kil H, Wolven B, Strickl D, Craven J, Straus T, and the GUVI Science Team

Seasonal variation of thermospheric composition as measured by TIMED/GUVI.

# Hackert C, Crowley G, Paxton LJ, Christensen A, Kil H, Zhang Y, Morrison D, Goncharenko L, Makela J, Sahai Y, and the GUVI Team

Space weather effects of the April 15–23 2002 geomagnetic storm.

# Kamalabadi F, Comberiate J, Paxton L, and Kil H

Detection and mapping of plasma bubbles with the Global Ultraviolet Imager.

# Nesse H, Stadsnes J, Aksnes A, Saetre C, Aasnes A, Christensen AB, Anderson PC, Paxton L, and Ostgaard N

Atmospheric effects of energetic electron precipitation during substorms.

# Paxton L, Christensen A, Avery S, Craven J, Crowley G, Meier R, Meng C, Srickl D, Swenson C, Walterscheid R, and the GUVI Science Team

The Sun-Earth connection as viewed from GUVI on TIMED.

# Solomon SC, Bailey SM, Eparvier FG, Gladstone GR, Paxton LJ, and Woods $\mathrm{TN}$

New measurements by the TIMED solar extreme-ultraviolet experiment: Implications for thermospheric modeling.

#### Straus PR, Paxton LJ, Crowley G, Henderson S, Kil H, Morrison D, Swenson C, and Christensen AB

GUVI nighttime observations of the equatorial and mid-latitude ionosphere.

# Weiss M, Morrison D, Paxton L, and Barnes R

Using XML to perform a web-based interrogation of large-scale space physics data sets focusing on TIMED and SuperDARN data.

### Winick JR, Mlynczak MG, Wintersteiner PP, Martin-Torres F-J, Picard RH, Paxton LJ, Lopez-Puertas M, Russell JM III, Christensen A, and Gordley L

Analysis of the energy input and loss in the thermosphere during the April 2002 geomagnetic storm using SABER infrared limb emission and GUVI limb emission.

The following papers were presented at the *Quantum Electronics and Laser Sci. Conf.*, Baltimore, MD (1–6 Jun 2003):

### Fitch MJ, Donegan JJ, Jacobs BC, Pittman TB, and Franson JD Improved single-photon detector performance.

# Franson JD, Donegan MM, Fitch MJ, Jacobs BC, and Pittman TB High-fidelity quantum logic operations and entangled ancilla states.

### Jacobs BC, Pittman TB, Fitch MJ, and Franson JD Quantum logic operations in optical fibers.

The following papers were presented at the *Int. Symp. on Optical Sci. and Technol.*, *The Int. Soc. for Optical Engineering*, 48th Ann. SPIE Mtg., San Diego, CA (3–8 Aug 2003):

# Fielhauer KB Boone BG, Bruzzi JR, Kluga BE, Connelly JR, Bierbaum MM, Gorman JJ, and Dagalakis N

Comparison of macro-tip/tilt and meso-scale position beam-steering transducers for free-space optical communications using a quadrant photodiode sensor.

# Pittman TB, Jacobs BC, and Franson JD

Periodic single photon source and quantum memory.

# Silverglate PR, and Fort DE

System design of the Compact Reconnaissance Imaging Spectrometer for the Mars (CRISM) hyperspectral imager.

# Warren JW, and Heffernan KJ

The CONTOUR remote imager and spectrometer.

The following papers were presented at the 5th IAA Int. Conf. on Low-Cost Planetary Missions, European Space Agency, Noordwijk, Netherlands (24–26 Sep 2003):

# Gold RE, McNutt RL Jr, and Solomon SC The MESSENGER science payload.

The WILCOLIVOLIV science payload.

Haley DR, Strikwerda TE, and Ailinger KG Star tracker scan mode capability for the New Horizons mission.

# Paschalidis NP

A family of space qualified microelectronics technologies developed and flying on spacecraft and instrumentation systems.