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Space Telescopes and Instrumentation 2012: Ultraviolet to Gamma Ray

**Tadayuki Takahashi
Stephen S. Murray
Jan-Willem A. den Herder**
Editors

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Planétologie, OMP-UPS, Univ. de Toulouse (France) and Institut de Recherche en Astrophysique et Planétologie. CNRS (France); A. Claret, B. Cordier, CEA Saclay (France); J.-G. Cuby, Lab. d'Astrophysique de Marseille (France); Z. Dai, Nanjing Univ. (China); F. Daigne, Institut d'Astrophysique de Paris (France); J. Deng, National Astronomical Observatories (China); Y. Dong, Institute of High Energy Physics (China); D. Götz, CEA Saclay (France); J. Hu, National Astronomical Observatories (China); P. Mandrou, Institut de Recherche en Astrophysique et Planétologie, OMP-UPS, Univ. de Toulouse (France) and CNRS, Institut de Recherche en Astrophysique et Planétologie (France); J. P. Osborne, Univ. of Leicester (United Kingdom); Y. Qiu, J. Wang, National Astronomical Observatories (China); B. Wu, Institute of High Energy Physics (China); C. Wu, W. Yuan, National Astronomical Observatories (China)

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H. Awaki, Ehime Univ. (Japan); P. Azzarello, Univ. de Geneva (Switzerland); C. Baluta, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); A. Bamba, Aoyama Gakuin Univ. (Japan); N. Bando, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); M. Bautz, Kavli Institute for Astrophysics and Space Research, Massachusetts Institute of Technology (United States); R. Blandford, Kavli Institute for Particle Astrophysics and Cosmology, Stanford Univ. (United States); K. Boyce, NASA Goddard Space Flight Ctr. (United States); G. Brown, Lawrence Livermore National Lab. (United States); E. Cackett, Institute of Astronomy, Cambridge Univ. (United Kingdom); M. Chernyakova, The Dublin Institute for Advanced Studies (Ireland); P. Coppi, Yale Univ. (United States); E. Costantini, J. de Plaa, J. W. den Herder, SRON Netherlands Institute for Space Research (Netherlands); M. DiPirro, NASA Goddard Space Flight Ctr. (United States); C. Done, Durham Univ. (United Kingdom); T. Dotani, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); J. Doty, Noqi Aerospace, Ltd. (United States); K. Ebisawa, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); M. Eckart, NASA Goddard Space Flight Ctr. (United States); T. Enoto, RIKEN (Japan); Y. Ezo, Tokyo Metropolitan Univ. (Japan); A. Fabian, Institute of Astronomy, Cambridge Univ. (United Kingdom); C. Ferrigno, Univ. de Geneva (Switzerland); A. Foster, Harvard-Smithsonian Ctr. for Astrophysics (United States); R. Fujimoto, Kanazawa Univ. (Japan); Y. Fukazawa, Hiroshima Univ. (Japan); S. Funk, Kavli Institute for Particle Astrophysics and Cosmology, Stanford Univ. (United States); A. Furuzawa, Nagoya Univ. (Japan); M. Galeazzi, Univ. of Miami (United States); L. Gallo, Saint Mary's Univ. (Canada); P. Gandhi, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); K. Gendreau, NASA Goddard Space Flight Ctr. (United States); K. Gilmore, Kavli Institute for Particle Astrophysics and Cosmology, Stanford Univ. (United States); D. Haas, SRON Netherlands Institute for Space Research (Netherlands); Y. Haba, Nagoya Univ. (Japan); K. Hamaguchi, Univ. of Maryland (United States); I. Hatsukade, Univ. of Miyazaki (Japan); T. Hayashi, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); K. Hayashida, Osaka Univ. (Japan); J. Hiraga, Univ. of Tokyo (Japan); K. Hirose, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); A. Hornschemeier, NASA Goddard Space Flight Ctr. (United States); A. Hoshino, Kanazawa Univ. (Japan); J. Hughes, Rutgers, Univ. of New Jersey (United States); U. Hwang, Johns Hopkins Univ. (United States); R. Iizuka, Chuo Univ. (Japan); Y. Inoue, Kavli Institute for Particle Astrophysics and Cosmology, Stanford Univ. (United States); K. Ishibashi, Nagoya Univ. (Japan); M. Ishida, K. Ishimura, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); Y. Ishisaki, Tokyo Metropolitan Univ. (Japan); M. Ito, Kobe Univ. (Japan); N. Iwata, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); N. Iyomoto, Kyushu Univ. (Japan); J. Kaastra, SRON Netherlands Institute for Space Research (Netherlands); T. Kallman, NASA Goddard Space Flight Ctr. (United States); T. Kamae, Kavli Institute for Particle Astrophysics and Cosmology, Stanford Univ. (United States); J. Kataoka, Waseda Univ. (Japan); S. Katsuda, RIKEN (Japan); H. Kawahara, Tokyo Metropolitan Univ. (Japan); M. Kawaharada, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); N. Kawai, Tokyo Institute of Technology (Japan); S. Kawasaki, D. Khangaluyan, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); C. Kilbourne, NASA Goddard Space Flight Ctr. (United States); M. Kimura, Osaka Univ. (Japan); K. Kinugasa, Gunma Astronomical Observatory (Japan); S. Kitamoto, Rikkyo Univ. (Japan); T. Kitayama, Toho Univ. (Japan); T. Kohmura, Kogakuin Univ. (Japan); M. Kokubun, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); T. Kosaka, Kochi Univ. of Technology (Japan); A. Koujelev, Space Exploration Development, Canadian Space Agency (Canada);

K. Koyama, Kyoto Univ. (Japan); H. Krimm, NASA Goddard Space Flight Ctr. (United States); A. Kubota, Shibaura Institute of Technology (Japan); H. Kunieda, Nagoya Univ. (Japan); S. LaMassa, Yale Univ. (United States); P. Laurent, F. Lebrun, CEA Saclay (France); M. Leutenegger, NASA Goddard Space Flight Ctr. (United States); O. Limousin, CEA Saclay (France); M. Loewenstein, NASA Goddard Space Flight Ctr. (United States); K. Long, Space Science Telescope Institute (United States); D. Lumb, ESA/ESTEC (Netherlands); G. Madejski, Kavli Institute for Particle Astrophysics and Stanford Univ. (United States); Y. Maeda, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); K. Makishima, The Univ. of Tokyo (Japan); G. Marchand, Canadian Space Agency (Canada); M. Markevitch, NASA Goddard Space Flight Ctr. (United States); H. Matsumoto, Nagoya Univ. (Japan); K. Matsushita, Tokyo Univ. of Science (Japan); D. McCammon, Univ. of Wisconsin-Madison (United States); B. McNamara, Univ. of Waterloo (Canada); J. Miller, Univ. of Michigan (United States); E. Miller, Kavli Institute for Astrophysics and Space Research, Massachusetts Institute of Technology (United States); S. Mineshige, Kyoto Univ. (Japan); K. Minesugi, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); I. Mitsuishi, Tokyo Metropolitan Univ. (Japan); T. Miyazawa, Nagoya Univ. (Japan); T. Mizuno, Hiroshima Univ. (Japan); H. Mori, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); K. Mori, Univ. of Miyazaki (Japan); K. Mukai, NASA Goddard Space Flight Ctr. (United States); T. Murakami, Kanazawa Univ. (Japan); H. Murakami, Rikkyo Univ. (Japan); R. Mushotzky, Univ. of Maryland (United States); H. Nagano, Nagoya Univ. (Japan); R. Nagino, Osaka Univ. (Japan); T. Nakagawa, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); H. Nakajima, Osaka Univ. (Japan); T. Nakamori, Waseda Univ. (Japan); K. Nakazawa, Univ. of Tokyo (Japan); Y. Namba, Chubu Univ. (Japan); C. Natsukari, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); Y. Nishioka, Univ. of Miyazaki (Japan); M. Nobukawa, Kyoto Univ. (Japan); M. Nomachi, Osaka Univ. (Japan); S. O'Dell, NASA Marshall Space Flight Ctr. (United States); H. Odaka, H. Ogawa, M. Ogawa, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); K. Ogi, Ehime Univ. (Japan); T. Ohashi, Tokyo Metropolitan Univ. (Japan); M. Ohno, Hiroshima Univ. (Japan); M. Ohta, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); T. Okajima, NASA Goddard Space Flight Ctr. (United States); A. Okamoto, Japan Aerospace Exploration Agency (Japan); T. Okazaki, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); N. Ota, Nara Women's Univ. (Japan); M. Ozaki, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); F. Paerels, Columbia Univ. (United States); S. Paltani, Univ. de Geneve (Switzerland); A. Parmar, ESA/ESTEC (Spain); R. Petre, NASA Goddard Space Flight Ctr. (United States); M. Pohl, Univ. de Geneva (Switzerland); F. S. Porter, NASA Goddard Space Flight Ctr. (United States); B. Ramsey, NASA Marshall Space Flight Ctr. (United States); R. Reis, Univ. of Michigan (United States); C. Reynolds, Univ. of Maryland, College Park (United States); H. Russell, Univ. of Waterloo (Canada); S. Safi-Harb, Univ. of Manitoba (Canada); S. Sakai, H. Sameshima, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); J. Sanders, Institute of Astronomy, Cambridge Univ. (United Kingdom); G. Sato, R. Sato, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); Y. Sato, Japan Aerospace Exploration Agency (Japan); K. Sato, Tokyo Univ. of Science (Japan); M. Sawada, Aoyama Gakuin Univ. (Japan); P. Serlemitsos, NASA Goddard Space Flight Ctr. (United States); H. Seta, Rikkyo Univ. (Japan); Y. Shibano, M. Shida, T. Shimada, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); K. Shinozaki, Japan Aerospace Exploration Agency (Japan); P. Shirron, NASA Goddard Space Flight Ctr. (United States); A. Simionescu, Kavli Institute for Particle Astrophysics and Cosmology, Stanford Univ. (United States); C. Simmons, NASA Goddard Space Flight Ctr. (United States); R. Smith,

Harvard-Smithsonian Ctr. for Astrophysics (United States); G. Sneiderman, Y. Soong, NASA Goddard Space Flight Ctr. (United States); L. Stawarz, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); Y. Sugawara, Chuo Univ. (Japan); H. Sugita, Japan Aerospace Exploration Agency (Japan); S. Sugita, Nagoya Univ. (Japan); A. Szymkowiak, Yale Univ. (United States); H. Tajima, Nagoya Univ. (Japan); H. Takahashi, Hiroshima Univ. (Japan); S. Takeda, Y. Takei, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); T. Tamagawa, RIKEN (Japan); T. Tamura, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); K. Tamura, Nagoya Univ. (Japan); T. Tanaka, Kyoto Univ. (Japan); Y. Tanaka, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); M. Tashiro, Saitama Univ. (Japan); Y. Tawara, Nagoya Univ. (Japan); Y. Terada, Saitama Univ. (Japan); Y. Terashima, Ehime Univ. (Japan); F. Tombesi, NASA Goddard Space Flight Ctr. (United States); H. Tomida, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); Y. Tsuboi, Chuo Univ. (Japan); M. Tsujimoto, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); H. Tsunemi, Osaka Univ. (Japan); T. Tsuru, H. Uchida, Kyoto Univ. (Japan); Y. Uchiyama, Kavli Institute for Particle Astrophysics and Cosmology, Stanford Univ. (United States); H. Uchiyama, The Univ. of Tokyo (Japan); Y. Ueda, Kyoto Univ. (Japan); S. Ueno, Japan Aerospace Exploration Agency (Japan); S. Uno, Nihon Fukushi Univ. (Japan); M. Urry, Yale Univ. (United States); E. Ursino, Univ. of Miami (United States); C. de Vries, SRON Netherlands Institute for Space Research (Netherlands); A. Wada, Japan Aerospace Exploration Agency (Japan); S. Watanabe, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); N. Werner, Kavli Institute for Particle Astrophysics and Cosmology, Stanford Univ. (United States); N. White, NASA Goddard Space Flight Ctr. (United States); T. Yamada, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); S. Yamada, RIKEN (Japan); H. Yamaguchi, Harvard-Smithsonian Ctr. for Astrophysics (United States); N. Yamasaki, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); S. Yamauchi, Nara Women's Univ. (Japan); M. Yamauchi, Univ. of Miyazaki (Japan); Y. Yatsu, Tokyo Institute of Technology (Japan); D. Yonetoku, Kanazawa Univ. (Japan); A. Yoshida, Aoyama Gakuin Univ. (Japan); T. Yuasa, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan)

8443 20 **First measurement of the ASTRO-H soft x-ray telescope performance** [8443-72]
T. Okajima, P. J. Serlemitsos, Y. Soong, D. J. Hahne, NASA Goddard Space Flight Ctr. (United States)

8443 23 **Soft x-ray imager (SXI) onboard ASTRO-H** [8443-75]
K. Hayashida, H. Tsunemi, Osaka Univ. (Japan); T. G. Tsuru, Kyoto Univ. (Japan); T. Dotani, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); H. Nakajima, N. Anabuki, Osaka Univ. (Japan); M. Ozaki, C. Natsukari, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); J. S. Hiraga, The Univ. of Tokyo (Japan); H. Tomida, Japan Aerospace Exploration Agency (Japan); T. Kohmura, Kogakuin Univ. (Japan); H. Murakami, Rikkyo Univ. (Japan); K. Mori, M. Yamauchi, I. Hatsukade, Y. Nishioka, Univ. of Miyazaki (Japan); A. Bamba, Aoyama Gakuin Univ. (Japan); H. Uchida, M. Nobukawa, T. Tanaka, Kyoto Univ. (Japan); R. Nagino, S. Ueda, Osaka Univ. (Japan); T. Fujinaga, K. Matsuta, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); T. Ohnishi, Kyoto Univ. (Japan); J. P. Doty, Noqsi Aerospace, Ltd. (United States)

- 8443 24 **Current status of ASTRO-H Hard X-ray Telescopes (HXTs)** [8443-76]
H. Awaki, Ehime Univ. (Japan); H. Kunieda, A. Furuzawa, Y. Haba, Nagoya Univ. (Japan);
T. Hayashi, Institute of Space and Astronautical Science, Japan Aerospace Exploration
Agency (Japan); R. Iizuka, Chuo Univ. (Japan); K. Ishibashi, Nagoya Univ. (Japan);
M. Ishida, Institute of Space and Astronautical Science, Japan Aerospace Exploration
Agency (Japan); M. Itoh, Kobe Univ. (Japan); T. Kosaka, Kochi Univ. of Technology
(Japan); Y. Maeda, Institute of Space and Astronautical Science, Japan Aerospace
Exploration Agency (Japan); H. Matsumoto, T. Miyazawa, Nagoya Univ. (Japan); H. Mori,
Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency
(Japan); H. Nagano, Nagoya Univ. (Japan); Y. Namba, Chubu Univ. (Japan); Y. Ogasaka,
Japan Science and Technology Agency (Japan); K. Ogi, Ehime Univ. (Japan); T. Okajima,
NASA Goddard Space Flight Ctr. (United States); S. Sugita, Nagoya Univ. (Japan);
Y. Suzuki, Japan Synchrotron Radiation Research Institute (Japan); K. Tamura, Y. Tawara,
Nagoya Univ. (Japan); K. Uesugi, Japan Synchrotron Radiation Research Institute (Japan);
K. Yamashita, Japan Science and Technology Agency (Japan); S. Yamauchi, Nara
Women's Univ. (Japan)
- 8443 25 **The Hard X-ray Imager (HXI) for the ASTRO-H Mission** [8443-77]
M. Kokubun, Institute of Space and Astronautical Science, Japan Aerospace Exploration
Agency (Japan); K. Nakazawa, The Univ. of Tokyo (Japan); T. Enoto, RIKEN (Japan);
Y. Fukazawa, Hiroshima Univ. (Japan); J. Kataoka, Waseda Univ. (Japan); M. Kawaharada,
Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency
(Japan); P. Laurent, F. Lebrun, O. Limousin, Service d'Astrophysique, IRFU-CEA Saclay
(France); K. Makishima, The Univ. of Tokyo (Japan); T. Mizuno, Hiroshima Univ. (Japan);
K. Mori, Institute of Space and Astronautical Science, Japan Aerospace Exploration
Agency (Japan); T. Nakamori, Research Institute for Science and Engineering, Waseda
Univ. (Japan); H. Odaka, M. Ohno, M. Ohta, G. Sato, R. Sato, Institute of Space and
Astronautical Science, Japan Aerospace Exploration Agency (Japan); H. Tajima, Solar-
Terrestrial Environment Lab., Nagoya Univ. (Japan); H. Takahashi, Hiroshima Univ. (Japan);
T. Takahashi, Institute of Space and Astronautical Science, Japan Aerospace Exploration
Agency (Japan); T. Tanaka, Kyoto Univ. (United States); Y. Terada, Saitama Univ. (Japan);
H. Uchiyama, The Univ. of Tokyo (Japan); Y. Uchiyama, Kavli Institute for Astrophysics and
Space Research, Stanford Univ. (United States); S. Watanabe, Institute of Space and
Astronautical Science, Japan Aerospace Exploration Agency (Japan); Y. Yatsu, Tokyo
Institute of Technology (Japan); T. Yuasa, Institute of Space and Astronautical Science,
Japan Aerospace Exploration Agency (Japan)
- 8443 26 **Soft gamma-ray detector for the ASTRO-H Mission** [8443-78]
S. Watanabe, Institute of Space and Astronautical Science, Japan Aerospace Exploration
Agency (Japan) and The Univ. of Tokyo (Japan); H. Tajima, Solar Terrestrial Environment
Lab., Nagoya Univ. (Japan); Y. Fukazawa, Hiroshima Univ. (Japan); R. Blandford, Kavli
Institute for Particle Astrophysics and Cosmology, Stanford Univ. (United States); T. Enoto,
Cosmic Radiation Lab., Institute of Physical and Chemical Research, RIKEN (Japan);
J. Kataoka, Waseda Univ. (Japan); M. Kawaharada, M. Kokubun, Institute of Space and
Astronautical Science, Japan Aerospace Exploration Agency (Japan); P. Laurent,
F. Lebrun, O. Limousin, CEA Saclay (France); G. Madejski, Kavli Institute for Particle
Astrophysics and Cosmology, Stanford Univ. (United States); K. Makishima, Univ. of Tokyo
(Japan); T. Mizuno, Hiroshima Univ. (Japan); T. Nakamori, Waseda Univ. (Japan);
K. Nakazawa, The Univ. of Tokyo (Japan); K. Mori, H. Odaka, Institute of Space and
Astronautical Science, Japan Aerospace Exploration Agency (Japan); M. Ohno, Hiroshima
Univ. (Japan); M. Ohta, G. Sato, R. Sato, S. Takeda, Institute of Space and Astronautical
Science, Japan Aerospace Exploration Agency (Japan); H. Takahashi, Hiroshima Univ.

(Japan); T. Takahashi, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan) and The Univ. of Tokyo (Japan); T. Tanaka, Kyoto Univ. (Japan); M. Tashiro, Y. Terada, Saitama Univ. (Japan); H. Uchiyama, The Univ. of Tokyo (Japan); Y. Uchiyama, Kavli Institute for Particle Astrophysics and Cosmology, Stanford Univ. (United States); S. Yamada, Cosmic Radiation Lab., Institute of Physical and Chemical Research, RIKEN (Japan); Y. Yatsu, Tokyo Institute of Technology (Japan); D. Yonetoku, Kanazawa Univ. (Japan); T. Yuasa, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan)

SESSION 17 ATHENA

- 8443 28 **Status of the ESA L1 mission candidate ATHENA** [8443-80]
 N. Rando, D. Martin, D. Lumb, P. Verhoeve, T. Oosterbroek, M. Bavdaz, S. Fransen, M. Linder, R. Peyrou-Lauga, ESA-ESTEC (Netherlands); T. Voirin, M. Braghin, S. Mangunsong, M. van Pelt, E. Wille, ESA-ESTEC (Netherlands)
- 8443 29 **Silicon pore optics developments and status** [8443-81]
 M. Bavdaz, E. Wille, K. Wallace, B. Shortt, ESA-ESTEC (Netherlands); M. Collon, M. Ackermann, cosine Research B.V. (Netherlands); M. Olde Riekerink, J. Haneveld, Micronit Microfluidics B.V. (Netherlands); C. van Baren, SRON Netherlands Institute for Space Research (Netherlands); M. Erhard, Kayser-Threde GmbH (Germany); F. Christensen, DTU Space (Denmark); M. Krumrey, Physikalisch-Technische Bundesanstalt (Germany); V. Burwitz, Max-Planck-Institut für extraterrestrische Physik (Germany)
- 8443 2A **Reference payload of the ESA L1 mission candidate ATHENA** [8443-82]
 D. Martin, N. Rando, D. Lumb, P. Verhoeve, T. Oosterbroek, M. Bavdaz, ESA-ESTEC (Netherlands)
- 8443 2B **The x-ray microcalorimeter spectrometer onboard Athena** [8443-83]
 J. W. den Herder, SRON Netherlands Institute for Space Research (Netherlands); D. Bagnali, INFN-Physics, Univ. degli Studi di Genova (Italy); S. Bandler, NASA Goddard Space Flight Ctr. (United States); M. Barbera, INAF, Osservatorio Astronomico di Palermo (Italy); X. Barcons, Instituto de Física de Cantabria, CSIC-UC (Spain); D. Barret, Institut de Recherche en Astrophysique et Planétologie (France); P. Bastia, Thales Alenia Space Italia S.p.A. (Italy); M. Bisotti, INFN-Physics, Univ. degli Studi di Genova (Italy); K. Boyce, NASA Goddard Space Flight Ctr. (United States); C. Cara, Institut de Recherche en Astrophysique et Planétologie (France); M. Ceballos, Univ. de Cantabria, CSIC (Spain); L. Corcione, INAF, Osservatorio Astronomico di Torino (Italy); B. Cobo, Univ. de Cantabria, CSIC (Spain); L. Colasanti, INAF/IASF Roma (Italy); J. de Plaa, SRON Netherlands Institute for Space Research (Netherlands); M. DiPirro, NASA Goddard Space Flight Ctr. (United States); W. B. Doriese, National Institute of Standards and Technology (United States); Y. Ezoe, Tokyo Metropolitan Univ. (Japan); R. Fujimoto, Kanazawa Univ. (Japan); F. Gatti, INFN-Physics, Univ. degli Studi di Genova (Italy); L. Gottardi, SRON Netherlands Institute for Space Research (Netherlands); P. Guttridge, Mullard Space Science Lab. (United Kingdom); R. den Hartog, SRON Netherlands Institute for Space Research (Netherlands); I. Hepburn, Mullard Space Science Lab. (United Kingdom); R. Kelley, NASA Goddard Space Flight Ctr. (United States); K. Irwin, National Institute of Standards and Technology (United States); Y. Ishisaki, Tokyo Metropolitan Univ. (Japan); C. Kilbourne, NASA Goddard Space Flight Ctr. (United States); P. A. J. de Korte, J. van der Kuur, SRON Netherlands Institute for Space Research (Netherlands); S. Lotti, C. Macculi, INAF/IASF Roma (Italy); K. Mitsuda, Institute of Space and Astronautical Science, Japan Aerospace Exploration

Agency (Japan); T. Mineo, INAF/IASF Palermo (Italy); L. Natalucci, INAF/IASF Roma (Italy); T. Ohashi, Tokyo Metropolitan Univ. (Japan); M. Page, Mullard Space Science Lab. (United Kingdom); S. Paltani, Univ. of Geneva (Switzerland); E. Perinati, INAF/IASF Palermo (Italy); L. Piro, INAF/IASF Roma (Italy); C. Pigot, Institut de Recherche en Astrophysique et Planétologie (France); F. S. Porter, NASA Goddard Space Flight Ctr. (United States); G. Rauw, Ctr. Spatial de Liège (Belgium); L. Ravera, Institut de Recherche en Astrophysique et Planétologie (France); E. Renotte, Ctr. Spatial de Liège (Belgium); J. L. Sauvageot, Institut de Recherche en Astrophysique et Planétologie (France); C. Schmid, Univ. of Erlangen-Nuremberg (Germany); S. Sciortino, INAF, Osservatorio Astronomico di Palermo (Italy); P. Shirron, NASA Goddard Space Flight Ctr. (United States); Y. Takei, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); G. Torrioli, Istituto di Fotonica e Nanotecnologie, CNR (Italy); M. Tsujimoto, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); L. Valenziano, INAF/IASF Bologna (Italy); D. Willingale, Leicester Univ. (United Kingdom); C. de Vries, H. van Weers, SRON Netherlands Institute for Space Research (Netherlands); J. Wilms, Univ. of Erlangen-Nuremberg (Germany); N. Y. Yamasaki, Institute of Space and Astronautical Science (Japan)

SESSION 18 LOFT

8443 2D **LOFT: the Large Observatory For X-ray Timing** [8443-85]

M. Feroci, IAPS-INAF (Italy) and INFN (Italy); J. W. den Herder, SRON Netherlands Institute for Space Research (Netherlands); E. Bozzo, ISDC Data Ctr. for Astrophysics (Switzerland); D. Barret, Institut de Recherche en Astrophysique et Planétologie (France); S. Brandt, DTU Space (Denmark); M. Hernanz, IEEC-CSIC-UPC-UB (Spain); M. van der Klis, Astronomical Institute Anton Pannekoek, Univ. of Amsterdam (Netherlands); M. Pohl, Univ. of Geneva (Switzerland); A. Santangelo, Institut für Astronomie and Astrophysik, Univ. Tübingen (Germany); L. Stella, INAF, Osservatorio Astronomico di Roma (Italy); A. Watts, Astronomical Institute Anton Pannekoek, Univ. of Amsterdam (Netherlands); J. Wilms, Univ. Erlangen-Nuremberg (Germany); S. Zane, Mullard Space Science Lab., Univ. College London (United Kingdom); M. Ahangarianabhari, Politecnico di Milano (Italy); A. Alpar, Sabanci Univ. (Turkey); D. Altamirano, Astronomical Institute Anton Pannekoek, Univ. of Amsterdam (Netherlands); L. Alvarez, IEEC-CSIC-UPC-UB (Spain); L. Amati, INAF/IASF Bologna (Italy); C. Amoros, Institut de Recherche en Astrophysique et Planétologie (France); N. Andersson, Univ. of Southampton (United Kingdom); A. Antonelli, Agenzia Spaziale Italiana (Italy); A. Argan, IAPS-INAF (Italy); R. Artigue, Institut de Recherche en Astrophysique et Planétologie (France); P. Azzarello, Univ. of Geneva (Switzerland); G. Baldazzi, Univ. degli Studi di Bologna (Italy); S. Balman, Middle East Technical Univ. (Turkey); M. Barbera, Univ. degli Studi di Palermo (Italy) and INAF, Osservatorio Astronomico di Palermo (Italy); T. Belloni, INAF, Osservatorio Astronomico di Brera (Italy); G. Bertuccio, Politecnico di Milano (Italy); S. Bianchi, Univ. degli Studi di Roma Tre (Italy); A. Bianchini, Univ. degli Studi di Padova (Italy); P. Bodin, Ctr. National d'Études Spatiales (France); J.-M. Bonnet Bidaud, CEA Saclay (France); S. Bouloukos, IAAT Univ. of Tuebingen (Germany); J. Braga, Instituto Nacional de Pesquisas Espaciais (Brazil); E. Brown, Michigan State Univ. (United States); N. Bucciantini, INAF, Osservatorio Astrofisico di Arcetri (Italy); L. Burderi, Univ. degli Studi di Cagliari (Italy); M. Bursa, Astronomical Institute of the ASCR, v.v.i. (Czech Republic); C. Budtz-Jørgensen, DTU Space (Denmark); E. Cackett, Wayne State Univ. (United States); F. R. Cadoux, Univ. of Geneva (Switzerland); P. Cais, Lab. d'Astrophysique de Bordeaux (France); G. A. Caliendo, IEEC-CSIC-UPC-UB (Spain); R. Campana, IAPS-INAF (Italy) and INFN (Italy); S. Campana, INAF, Osservatorio Astronomico di Brera (Italy); P. Casella, INAF, Osservatorio Astronomico di Roma (Italy);

D. Chakrabarty, Massachusetts Institute of Technology (United States); J. Chenevez, DTU Space (Denmark); J. Coker, R. Cole, Mullard Space Science Lab., Univ. College London (United Kingdom); A. Collura, INAF, Osservatorio Astronomico di Palermo (Italy); T. Courvoisier, ISDC, Geneva Univ. (Switzerland); A. Cros, Institut de Recherche en Astrophysique et Planétologie (France); A. Cumming, INAF, Osservatorio Astronomico di Capodimonte (Italy); G. Cusumano, INAF/ISF (Italy); A. D'Ai, Univ. degli Studi di Palermo (Italy); V. D'Elia, Agenzia Spaziale Italiana (Italy); E. Del Monte, IAPS-INAf (Italy) and INFN (Italy); D. de Martino, INAF, Osservatorio Astronomico di Capodimonte (Italy); A. De Rosa, S. Di Cosimo, IAPS-INAf (Italy); S. Diebold, Institut für Astronomie and Astrophysik, Univ. Tübingen (Germany); T. Di Salvo, Univ. degli studi di Palermo (Italy); I. Donnarumma, IAPS-INAf (Italy); A. Drago, Univ. degli Studi di Ferrara (Italy); M. Durant, Univ. of Florida (United States); D. Emmanoulopoulos, Univ. of Southampton (United Kingdom); Y. Evangelista, IAPS-INAf (Italy) and INFN (Italy); A. Fabian, Univ. of Cambridge (United Kingdom); M. Falanga, International Space Science Institute (Switzerland); Y. Favre, Univ. of Geneva (Switzerland); C. Feldman, Univ. of Leicester (United Kingdom); C. Ferrigno, ISDC, Geneva Univ. (Switzerland); M. H. Finger, Universities Space Research Ctr. (United States); G. W. Fraser, Univ. of Leicester (United Kingdom); F. Fuschino, INAF/IASF Bologna (Italy); D. K. Galloway, Monash Ctr. for Astrophysics, Monash Univ. (Australia); J. L. Galvez Sanchez, E. Garcia-Berro, IEEC-CSIC-UPC-UB (Spain); B. Gendre, Agenzia Spaziale Italiana (Italy); S. Gezari, Univ. of Maryland, College Park (United States); A. B. Giles, Univ. of Tasmania (Australia); M. Gilfanov, Max-Planck-Institut für Astrophysik (Germany); P. Giommi, Agenzia Spaziale Italiana (Italy); G. Giovannini, M. Giroletti, INAF/IRA Bologna (Italy); A. Goldwurm, AstroParticule et Cosmologie, CNRS, Univ. Paris Diderot (France) and CEA, Observatoire de Paris (France); D. Götz, C. Gouiffes, CEA Saclay (France); M. Grassi, Univ. degli Studi di Pavia (Italy); P. Groot, Clemson Univ. (United States); C. Guidorzi, Univ. degli Studi di Ferrara (Italy); D. Haas, SRON Netherlands Institute for Space Research (Netherlands); F. Hansen, DTU Space (Denmark); D. H. Hartmann, Clemson Univ. (United States); C. A. Haswell, The Open Univ. (United Kingdom); A. Heger, Monash Ctr. for Astrophysics, Monash Univ. (United Kingdom); J. Homan, Massachusetts Institute of Technology (United States); A. Hornstrup, DTU Space (Denmark); R. Hudec, Astronomical Institute of the ASCR, v.v.i. (Czech Republic) and Czech Technical Univ. in Prague (Czech Republic); J. Huovelin, Univ. of Helsinki (Finland); A. Ingram, Durham Univ. (United Kingdom); J. J. M. In't Zand, SRON Netherlands Institute for Space Research (Netherlands); J. Isern, IEEC-CSIC-UPC-UB (Spain); G. Israel, INAF, Osservatorio Astronomico di Roma (Italy); L. Izzo, IRCA (Italy); P. Jonker, SRON Netherlands Institute for Space Research (Netherlands); P. Kaaret, Michigan State Univ. (United States); V. Karas, Astronomical Institute of the ASCR, v.v.i. (Czech Republic); D. Karelin, IEEC-CSIC-UPC-UB (Spain); D. Kataria, Mullard Space Science Lab., Univ. College London, Univ. College London (United Kingdom); L. Keek, Michigan State Univ. (United States); T. Kennedy, Mullard Space Science Lab., Univ. College London (United Kingdom); D. Klochkov, Institut für Astronomie and Astrophysik, Univ. Tübingen (Germany); W. Kluzniak, Nicolaus Copernicus Astronomical Ctr. (Poland); K. Kokkotas, Institut für Astronomie and Astrophysik, Univ. Tübingen (Germany); S. Korpela, Univ. of Helsinki (Finland); C. Kouveliotou, NASA Marshall Space Flight Ctr. (United States); I. Kreykenbohm, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany); L. M. Kuiper, SRON Netherlands Institute for Space Research (Netherlands); I. Kuvvetli, DTU Space (Denmark); C. Labanti, INAF/IASF Bologna (Italy); D. Lai, Cornell Univ. (United States); F. K. Lamb, Univ. of Illinois at Urbana-Champaign (United States); F. Lebrun, AstroParticule et Cosmologie, CNRS, Univ. Paris Diderot (France) and CEA Observatoire de Paris (France); D. Lin, Institut de Recherche en Astrophysique et Planétologie (France); D. Linder, Mullard Space Science Lab., Univ. College London (United Kingdom); G. Lodato, Univ. degli Studi di Milano (Italy); F. Longo, Univ. degli Studi di Trieste (Italy); N. Lund, DTU Space (Denmark); T. J. Maccarone, Univ. of Southampton

(United Kingdom); D. Macera, Politecnico di Milano (Italy); D. Maier, Institut für Astronomie und Astrophysik, Univ. Tübingen (Germany); P. Malcovati, Univ. degli Studi di Pavia (Italy); V. Mangano, INAF/IFC (Italy); A. Manousakis, ISDC, Geneva Univ. (Switzerland); M. Marisaldi, INAF/IASF Bologna (Italy); A. Markowitz, Univ. of California, San Diego (United States); A. Martindale, Univ. of Leicester (United Kingdom); G. Matt, Univ. degli Studi di Roma Tre (Italy); I. M. McHardy, Univ. of Southampton (United Kingdom); A. Melatos, The Univ. of Melbourne (Australia); M. Mendez, Kapteyn Instituut, Univ. of Groningen (Netherlands); S. Migliari, Univ. of Barcelona (Spain); R. Mignani, Mullard Space Science Lab., Univ. College London (United Kingdom) and Kepler Institute of Astronomy, Univ. of Zielona Góra (Poland); M. C. Miller, Univ. of Maryland, College Park (United States); J. M. Miller, Univ. of Barcelona (Spain); T. Mineo, INAF/IFC (Italy); G. Miniutti, Ctr. de Astrobiología, CSIC-INTA (Spain); S. Morsink, Univ. of Alberta (Canada); C. Motch, Observatoire Astronomique de Strasbourg (France); S. Motta, INAF, Osservatorio Astronomico di Brera (Italy); M. Mouchet, Univ. Paris 5-Denis Diderot (France); F. Muleri, IAPS-INAF (Italy) and INFN (Italy); A. J. Norton, The Open Univ. (United Kingdom); M. Nowak, Massachusetts Institute of Technology (United States); P. O'Brien, Univ. of Leicester (United Kingdom); M. Orienti, INAF/IASF Bologna (Italy); M. Orio, INAF, Osservatorio Astronomico di Padova (France) and Univ. of Wisconsin-Madison (United States); M. Orlandini, INAF/IASF Bologna (Italy); P. Orleanski, Space Research Ctr. (Poland); J. P. Osborne, Univ. of Leicester (United Kingdom); R. Osten, Space Telescope Science Institute (United States); F. Ozel, The Univ. of Arizona (United States); L. Pacciani, IAPS-INAF (Italy) and INFN (Italy); A. Papitto, IEEC-CSIC-UPC-UB (Italy); B. Paul, Raman Research Institute (India); E. Perinati, Institut für Astronomie und Astrophysik, Univ. Tübingen (Germany); V. Petracek, Czech Technical Univ. in Prague (Czech Republic); J. Portell, IEEC-CSIC-UPC-UB (Spain); J. Poutanen, Univ. of Oulu (Finland); D. Psaltis, The Univ. of Arizona (United States); D. Rambaud, Institut de Recherche en Astrophysique et Planétologie (France); G. Ramsay, Armagh Observatory (United Kingdom); M. Rapisarda, IAPS-INAF (Italy) and INFN (Italy); A. Rachevski, INFN (Italy); P. S. Ray, U.S. Naval Research Lab. (United States); N. Rea, IEEC-CSIC-UPC-UB (Spain); S. Reddy, Univ. of Washington (United States); P. Reig, Foundation for Research and Technology-Hellas (Greece) and Univ. of Crete (Greece); M. Reina Aranda, National Institute of Aerospace Technology (Spain); R. Remillard, Massachusetts Institute of Technology (United States); C. Reynolds, Univ. of Maryland, College Park (United States); P. Rodríguez-Gil, Instituto de Astrofísica de Canarias, Univ. de La Laguna (Spain) and Univ. de La Laguna (Spain); J. Rodriguez, CEA Saclay (France); P. Romano, INAF/IFC (Italy); E. M. R. Rossi, Leiden Observatory (Netherlands); F. Ryde, Royal Institute of Technology (Sweden); L. Sabau-Graziati, National Institute of Aerospace Technology (Spain); G. Sala, IEEC-CSIC-UPC-UB (Spain); R. Salvaterra, INAF/IASF Milano (Italy); A. Sanna, Kapteyn Astronomical Institute, Univ. of Groningen (Netherlands); S. Schanne, CEA Saclay (France); J. Schee, Silesian Univ. in Opava (Czech Republic); C. Schmid, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany); A. Schwenk, ExtreMe Matter Institute EMMI, GSI Helmholtzzentrum für Schwerionenforschung GmbH (Germany) and Institut für Kernphysik (Germany); A. D. Schwöpe, Leibniz-Institut für Astrophysik Potsdam (Germany); J.-Y. Seyler, Ctr. National d'Études Spatiales (France); A. Shearer, National Univ. of Ireland, Galway (Ireland); A. Smith, Mullard Space Science Lab., Univ. College London (United Kingdom); D. M. Smith, Univ. of California, Santa Cruz (United States); P. J. Smith, Mullard Space Science Lab., Univ. College London (United Kingdom); V. Sochora, Astronomical Institute of the ASCR, v.v.i. (Czech Republic); P. Soffitta, IAPS-INAF (Italy); P. Soleri, Kapteyn Astronomical Institute, Univ. of Groningen (Netherlands); B. Stappers, The Univ. of Manchester (United Kingdom); B. Steltzer, INAF IFC (Italy); N. Stergioulas, Aristotle Univ. of Thessaloniki (Greece); G. Stratta, Agenzia Spaziale Italiana (Italy); T. E. Strohmayer, NASA Goddard Space Flight Ctr. (United States); Z. Stuchlik, Silesian Univ. in Opava (Czech

Republic); S. Suchy, V. Sulemainov, Institut für Astronomie and Astrophysik, Univ. Tübingen (Germany); T. Takahashi, Institute of Space and Astronautical Science (Japan); F. Tamburini, Univ. degli Studi di Padova (Italy); C. Tenzer, Institut für Astronomie and Astrophysik, Univ. Tübingen (Germany); L. Tolos, IEEC-CSIC-UPC-UB (Spain); G. Torok, Silesian Univ. in Opava (Czech Republic); J. M. Torrejon, Univ. de Alicante (Spain); D. F. Torres, Institutió Catalana de Recerca i Estudis Avançats (Spain); A. Tramacere, ISDC, Geneva Univ. (Switzerland); A. Trois, IAPS-INAf (Italy); S. Turriziani, Univ. degli Studi di Roma Tor Vergata (Italy); P. Uter, Institut für Astronomie and Astrophysik, Univ. Tübingen (Germany); P. Uttley, Astronomical Institute Anton Pannekoek, Univ. of Amsterdam (Netherlands); A. Vacchi, INFN (Italy); P. Varniere, AstroParticule et Cosmologie, CNRS/N2P3, Univ. Paris Diderot, CEA/Irfu, Observatoire de Paris (France); S. Vaughan, Univ. of Leicester (United Kingdom); S. Vercellone, INAF/INF (Italy); V. Vrba, Institute of Physics of the ASCR, v.v.i. (Czech Republic); D. Walton, Mullard Space Science Lab., Univ. College London (United Kingdom); S. Watanabe, Institute of Space and Astronautical Science (Japan); R. Wawrzaszek, Space Research Ctr. (Poland); N. Webb, Institut de Recherche en Astrophysique et Planétologie (France); N. Weinberg, Massachusetts Institute of Technology (United States); H. Wende, Institut für Astronomie and Astrophysik, Univ. Tübingen (Germany); P. Wheatley, The Univ. of Warwick (United Kingdom); R. Wijers, R. Wijnands, Astronomical Institute Anton Pannekoek, Univ. of Amsterdam (Netherlands); M. Wille, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany); C. A. Wilson-Hodge, NASA Marshall Space Flight Ctr. (United States); B. Winter, Mullard Space Science Lab., Univ. College London (United Kingdom); K. Wood, U.S. Naval Research Lab. (United States); G. Zampa, N. Zampa, INFN (Italy); L. Zampieri, INAF, Osservatorio Astronomico di Padova (Italy); A. Zdziarski, Nicolaus Copernicus Astronomical Ctr. (Poland); B. Zhang, Univ. of Nevada, Las Vegas (United States)

8443 2E **Status of the assessment phase of the ESA M3 mission candidate LOFT** [8443-86]
C. Corral van Damme, M. Ayre, D. Lumb, A. Short, N. Rando, ESA/ESTEC (Netherlands)

8443 2F **A large area detector proposed for the Large Observatory for X-ray Timing (LOFT)** [8443-87]
S. Zane, D. Walton, T. Kennedy, Mullard Space Science Lab., Univ. College London (United Kingdom); M. Feroci, INAF/IAPS Roma (Italy); J.-W. Den Herder, SRON Netherlands Institute for Space Research (Netherlands); M. Ahangarianabhari, Politecnico di Milano (Italy); A. Argan, INAF HQ (Italy); P. Azzarello, ISDC, Science Data Ctr. for Astrophysics (Switzerland); G. Baldazzi, Univ. of Bologna (Italy); D. Barret, Institut de Recherche en Astrophysique et Planetologie (France); G. Bertuccio, Politecnico di Milano (Italy); P. Bodin, CNES, Ctr. Spatial de Toulouse (France); E. Bozzo, ISDC, Science Data Ctr. for Astrophysics (Switzerland); F. Cadoux, Geneva Univ. (Switzerland); P. Cais, Lab. d'Astrophysique de Bordeaux, CNRS, Univ. Bordeaux (France); R. Campana, INAF/IAPS Roma (Italy); J. Coker, Mullard Space Science Lab., Univ. College London (United Kingdom); A. Cros, Institut de Recherche en Astrophysique et Planetologie (France); E. Del Monte, A. De Rosa, S. Di Cosimo, I. Donnarumma, Y. Evangelista, INAF/IAPS Roma (Italy); Y. Favre, Geneva Univ. (Switzerland); C. Feldman, G. Fraser, Univ. of Leicester (United Kingdom); F. Fuschino, INAF/IASF Bologna (Italy); M. Grassi, Univ. of Pavia (Italy); M. R. Hailey, Mullard Space Science Lab., Univ. College London (United Kingdom); R. Hudec, Czech Technical Univ. in Prague (Czech Republic); C. Labanti, INAF/IASF Bologna (Italy); D. Macera, Politecnico di Milano (Italy); P. Malcovati, Univ. of Pavia (Italy); M. Marisaldi, INAF/IASF Bologna (Italy); A. Martindale, Univ. of Leicester (United Kingdom); T. Mineo, INAF/IASF Palermo (Italy); F. Muleri, INAF/IAPS Roma (Italy); M. Nowak, Massachusetts Institute of Technology (United States); M. Orlandini, INAF/IASF Bologna (Italy); L. Pacciani, INAF/IAPS Roma (Italy); E. Perinati, Institut für Astronomie and Astrophysik, Univ. Tübingen (Germany); V. Petracek, Czech Technical Univ. in Prague (Czech Republic); M. Pohl, Geneva Univ. (Switzerland);

A. Rachevski, INFN (Italy); P. Smith, Mullard Space Science Lab., Univ. College London (United Kingdom); A. Santangelo, Institut für Astronomie und Astrophysik, Univ. Tübingen (Germany); J.-Y. Seyler, CNES, Ctr. Spatial de Toulouse (France); C. Schmid, Dr. Remeis Observatory and ECAP, Univ. of Erlangen-Nuremberg (Germany); P. Soffitta, INAF/IAPS Roma (Italy); S. Suchy, C. Tenzer, Institut für Astronomie und Astrophysik, Univ. Tübingen (Germany); P. Uttley, Astronomical Institute Anton Pannokoek, Univ. of Amsterdam (Netherlands); A. Vacchi, G. Zampa, N. Zampa, INFN (Italy); J. Wilms, Dr. Remeis Observatory and ECAP, Univ. of Erlangen-Nuremberg (Germany); B. Winter, Mullard Space Science Lab., Univ. College London (United Kingdom)

8443 2G

The LOFT wide field monitor [8443-88]

S. Brandt, DTU Space (Denmark); M. Hernanz, L. Alvarez, IEEC, Consejo Superior de Investigaciones Científicas (Spain); P. Azzarello, ISDC Data Ctr. for Astrophysics (Switzerland); D. Barret, Institut de Recherche en Astrophysique et Planétologie (France); E. Bozzo, ISDC Data Ctr. for Astrophysics (Switzerland); C. Budtz-Jørgensen, DTU Space (Denmark); R. Campana, E. del Monte, I. Donnarumma, Y. Evangelista, M. Feroci, INAF/IASF Roma (Italy) and INFN (Italy); J. L. Galvez Sanchez, IEEC, Consejo Superior de Investigaciones Científicas (Spain); D. Götz, CEA Saclay (France); F. Hansen, DTU Space (Denmark); J. W. den Herder, SRON Netherlands Institute for Space Research (Netherlands); R. Hudec, Astronomical Institute of the ASCR, v.v.i. (Czech Republic); J. Huovelin, Univ. of Helsinki (Finland); D. Karelin, IEEC, Consejo Superior de Investigaciones Científicas (Spain); S. Korpela, Univ. of Helsinki (Finland); N. Lund, DTU Space (Denmark); P. Orleanski, Space Research Ctr. (Poland); M. Pohl, Univ. of Geneva (Switzerland); A. Rachevski, INFN (Italy); A. Santangelo, Univ. Tübingen (Germany); S. Schanne, CEA Saclay (France); C. Schmid, Univ. of Erlangen-Nuremberg (Germany) and Erlangen Ctr. of Astroparticle Physics (Germany); S. Suchy, C. Tenzer, Institut für Astronomie und Astrophysik, Univ. Tübingen (Germany); A. Vacchi, INFN (Italy); J. Wilms, Univ. of Erlangen-Nuremberg (Germany) and Erlangen Ctr. of Astroparticle Physics (Germany); G. Zampa, N. Zampa, INFN (Italy); J. in't Zand, Netherlands Institute for Space Research (Netherlands); A. Zdziarski, Nicolaus Copernicus Astronomical Ctr. (Poland)

8443 2H

The silicon micro-strip detector plane for the LOFT/wide-field monitor [8443-89]

A. Goldwurm, P. Ferrando, AstroParticule et Cosmologie (France) and Service d'Astrophysique/IRFU/CEA Saclay (France); D. Götz, Service d'Astrophysique/IRFU/CEA Saclay (France) and Astrophysique Instrumentation et Modélisation (AIM) in SAp/CEA Saclay (France); P. Laurent, F. Lebrun, AstroParticule et Cosmologie (France) and Service d'Astrophysique/IRFU/CEA Saclay (France); O. Limousin, Service d'Astrophysique/IRFU/CEA Saclay (France) and Astrophysique Instrumentation et Modélisation (AIM) in SAp/CEA-Saclay (France); S. Basa, Lab. d'Astrophysique de Marseille (France); W. Bertoli, AstroParticule et Cosmologie (France); E. Delagnes, SEDI/IRFU/CEA Saclay (France); Y. Dolgorouky, AstroParticule et Cosmologie (France); O. Gevin, SEDI/IRFU/CEA Saclay (France); A. Gros, C. Gouiffes, Service d'Astrophysique/IRFU/CEA Saclay (France) and Astrophysique Instrumentation et Modélisation (AIM) (France); F. Jeanneau, SEDI/IRFU/CEA Saclay (France); C. Lachaud, AstroParticule et Cosmologie (France); M. Llored, Lab. d'Astrophysique de Marseille (LAM) (France); C. Olivetto, G. Prévôt, AstroParticule et Cosmologie (France); D. Renaud, J. Rodriguez, Service d'Astrophysique/IRFU/CEA Saclay (France) and Astrophysique Instrumentation et Modélisation (AIM) (France); C. Rossin, Lab. d'Astrophysique de Marseille (France); S. Schanne, S. Soldi, Service d'Astrophysique/IRFU/CEA Saclay (France) and Astrophysique Instrumentation et Modélisation (AIM) (France); P. Varniere, AstroParticule et Cosmologie (France)

POSTER SESSION: DETECTOR TECHNOLOGY FOR FUTURE MISSIONS

- 8443 2J **Nuclear spallation by solar proton events and cosmic rays in the eROSITA and ATHENA focal plane configurations** [8443-91]
E. Perinati, C. Tenzer, A. Santangelo, Institut für Astronomie und Astrophysik, Univ. Tübingen (Germany); K. Dennerl, M. Freyberg, MPE- Max Planck Institut für Extraterrestrische Physik (Germany)
- 8443 2K **Southwest Research Institute intensified detector development capability** [8443-92]
E. Wilkinson, M. Vincent, C. Kofoed, J. Andrews, J. Brownsberger, Southwest Research Institute (United States); O. Siegmund, Sensor Sciences, LLC (United States)
- 8443 2L **Application of an EMCCD camera for calibration of hard X-ray telescopes** [8443-93]
J. K. Vogel, M. J. Pivovarov, Lawrence Livermore National Lab. (United States); V. V. Nagarkar, H. Kudrolli, Radiation Monitoring Devices, Inc. (United States); K. K. Madsen, California Institute of Technology (United States); J. E. Koglin, C. J. Hailey, Columbia Univ. Astrophysics Lab. (United States); W. W. Craig, Lawrence Livermore National Lab. (United States); F. E. Christensen, N. F. Brejnholt, DTU Space (Denmark)
- 8443 2N **A digital data processing unit for future X-ray observatories** [8443-95]
H. Wende, G. Distratis, C. Tenzer, E. Kendziorra, A. Santangelo, Institut für Astronomie und Astrophysik, Univ. Tübingen (Germany)
- 8443 2O **Low-power readout electronics for micro channel plate detectors with cross-strip anodes** [8443-97]
M. Pfeifer, J. Barnstedt, Institute for Astronomy and Astrophysics (Germany); C. Bauer, Max Planck Institute for Nuclear Physics (Germany); S. Diebold, S. Hermanutz, C. Kalkuhl, N. Kappellmann, Institute for Astronomy and Astrophysics (Germany); S. Löchner, Max Planck Institute for Nuclear Physics (Germany); T. Schanz, Institute for Astronomy and Astrophysics (Germany); M. Schmelling, Max Planck Institute for Nuclear Physics (Germany); K. Werner, Institute for Astronomy and Astrophysics (Germany)
- 8443 2Q **Vacuum facility for calibration of space instrumentation in cleanroom** [8443-99]
M. G. Pelizzo, IFN-CNR Luxor Lab. (Italy) and Univ. of Padua (Italy); P. Zuppella, IFN-CNR Luxor Lab. (Italy); V. Polito, A. J. Corso, Univ. of Padua (Italy); S. Zuccon, IFN-CNR Luxor Lab. (Italy); P. Nicolosi, Univ. of Padua (Italy)

POSTER SESSION: GAMMA-RAY BURST MISSIONS

- 8443 2R **A next generation Ultra-Fast Flash Observatory (UFFO-100) for IR/optical observations of the rise phase of gamma-ray bursts** [8443-18]
B. Grossan, Univ. of California, Berkeley (United States) and Extreme Universe Lab., Moscow State Univ. (Russian Federation) and Institute for the Early Universe, Ewha Womans Univ. (Korea, Republic of); I. H. Park, Research Ctr. for MEMS Space Telescope, Ewha Womans Univ. (Korea, Republic of); S. Ahmad, Univ. of Paris-Sud 11 (France); K. B. Ahn, Yonsei Univ. (Korea, Republic of); P. Barrillon, Univ. of Paris-Sud 11 (France); S. Brandt, C. Budtz-Jørgensen, Technical Univ. of Denmark (Denmark); A. J. Castro-Tirado, Instituto de Astrofísica de Andalucía, CSIC (Spain); P. Chen, National Taiwan Univ. (Taiwan); H. S. Choi, Technical Univ. of Denmark (Denmark); Y. J. Choi, KAIST (Korea, Republic of); P. Connell, Univ. of Valencia (Spain); S. Dagoret-Campagne, C. De La Taille, Univ. of Paris-Sud 11

(France); C. Eyles, Univ. of Valencia (Spain); I. Hermann, KAIST (Korea, Republic of); M.-H. A. Huang, National United Univ. (Taiwan); A. Jung, S. Jeong, J. E. Kim, M. Kim, Research Ctr. for MEMS Space Telescope, Ewha Womans Univ. (Korea, Republic of); S.-W. Kim, Yonsei Univ. (Korea, Republic of); Y. W. Kim, KAIST (Korea, Republic of); J. Lee, Research Ctr. for MEMS Space Telescope, Ewha Womans Univ. (Korea, Republic of); H. Lim, E. V. Linder, Institute for the Early Universe, Ewha Womans Univ. (Korea, Republic of); T.-C. Liu, National Taiwan Univ. (Taiwan); N. Lund, Technical Univ. of Denmark (Denmark); K. W. Min, KAIST (Korea, Republic of); G. W. Na, Research Ctr. for MEMS Space Telescope, Ewha Womans Univ. Ewha Womans Univ. (Korea, Republic of); J. W. Nam, National Taiwan Univ. (Taiwan); M. I. Panasyuk, Extreme Universe Lab., Moscow State Univ. (Russian Federation); J. Ripa, Research Ctr. for MEMS Space Telescope, Ewha Womans Univ. (Korea, Republic of); V. Reglero, J. M. Rodrigo, Univ. of Valencia (Spain); G. F. Smoot, Extreme Universe Lab., Moscow State Univ. (Russian Federation) and Institute for the Early Universe, Ewha Womans Univ. (Korea, Republic of) and Univ. of California, Berkeley (United States); J. E. Suh, Research Ctr. for MEMS Space Telescope, Ewha Womans Univ. (Korea, Republic of); S. Svertilov, N. Vedenkin, Extreme Universe Lab., Moscow State Univ. (Russian Federation); M.-Z. Wang, National Taiwan Univ. (Taiwan); I. Yashin, Moscow State Univ. (Russian Federation); M. H. Zhao, Research Ctr. for MEMS Space Telescope, Ewha Womans Univ. (Korea, Republic of)

8443 2S

The slewing mirror telescope of the Ultra Fast Flash Observatory Pathfinder [8443-100]

S. Jeong, Ewha Womans Univ. (Korea, Republic of); S. Ahmad, P. Barrillon, Univ. of Paris-Sud 11 (France); S. Brandt, C. Budtz-Jørgensen, Technical Univ. of Denmark (Denmark); A. J. Castro-Tirado, Instituto de Astrofísica de Andalucía, CSIC (Spain); P. Chen, National Taiwan Univ. (Taiwan); Y. J. Choi, KAIST (Korea, Republic of); P. Connell, Univ. of Valencia (Spain); S. Dagoret-Campagne, Univ. of Paris-Sud 11 (France); C. Eyles, Univ. of Valencia (Spain); B. Grossan, Univ. of California, Berkeley (United States); M.-h. A. Huang, National United Univ. (Taiwan); A. Jung, J. E. Kim, M. B. Kim, Ewha Womans Univ. (Korea, Republic of); S.-W. Kim, Yonsei Univ. (Korea, Republic of); Y. W. Kim, Ewha Womans Univ. (Korea, Republic of); A. S. Krasnov, Moscow State Univ. (Russian Federation); J. Lee, H. Lim, Ewha Womans Univ. (Korea, Republic of); E. V. Linder, Ewha Womans Univ. (Korea, Republic of) and Univ. of California, Berkeley (United States); T.-C. Liu, National Taiwan Univ. (Taiwan); N. Lund, Technical Univ. of Denmark (Denmark); K. W. Min, KAIST (Korea, Republic of); G. W. Na, Ewha Womans Univ. (Korea, Republic of); J. W. Nam, KAIST (Korea, Republic of); I. H. Park, Ewha Womans Univ. (Korea, Republic of); M. I. Panasyuk, Moscow State Univ. (Russian Federation); J. Ripa, Ewha Womans Univ. (Korea, Republic of); V. Reglero, J. M. Rodrigo, Univ. of Valencia (Spain); G. F. Smoot, Univ. of California, Berkeley (United States); J. E. Suh, Ewha Womans Univ. (Korea, Republic of); S. Svertilov, Moscow State Univ. (Russian Federation); N. Vedenkin, Lomonosov Moscow State Univ. (Russian Federation); M.-Z. Wang, National Taiwan Univ. (Taiwan); I. Yashin, Lomonosov Moscow State Univ. (Russian Federation); K.-B. Ahn, Yonsei Univ. (Korea, Republic of)

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The readout system and the trigger algorithm implementation for the UFFO Pathfinder [8443-101]

G. W. Na, Ewha Womans Univ. (Korea, Republic of); S. Ahmad, P. Barrillon, Univ. of Paris-Sud 11 (France); S. Brandt, C. Budtz-Jørgensen, Technical Univ. of Denmark (Denmark); A. J. Castro-Tirado, Instituto de Astrofísica de Andalucía (Spain); P. Chen, National Taiwan Univ. (Taiwan); Y. J. Choi, KAIST (Korea, Republic of); P. Connell, Univ. of Valencia (Spain); S. Dagoret-Campagne, Univ. of Paris-Sud 11 (France); C. Eyles, Univ. of Valencia (Spain); B. Grossan, Univ. of California, Berkeley (United States); M.-H. A. Huang, National United Univ. (Taiwan); S. Jeong, A. Jung, J. E. Kim, M. B. Kim, Ewha Womans Univ. (Korea, Republic of); S.-W. Kim, Yonsei Univ. (Korea, Republic of); Y. W. Kim, Ewha Womans Univ. (Korea,

Republic of); A. S. Krasnov, Moscow State University (Russian Federation); J. Lee, H. Lim, Ewha Womans Univ. (Korea, Republic of); E. V. Linder, Ewha Womans Univ. (Korea, Republic of) and Lawrence Berkeley National Lab. (United States); T.-C. Liu, National Taiwan Univ. (Taiwan); N. Lund, DTU Space (Denmark); K. W. Min, KAIST (Korea, Republic of); J. W. Nam, National Taiwan Univ. (Taiwan); I. H. Park, Ewha Womans Univ. (Korea, Republic of); M. I. Panasyuk, Lomonosov Moscow State Univ. (Russian Federation); J. Ripa, Ewha Womans Univ. (Korea, Republic of); V. Reglero, J. M. Rodrigo, Univ. of Valencia (Spain); G. F. Smoot, Ewha Womans Univ. (Korea, Republic of) and Univ. of California, Berkeley (United States); J. E. Suh, Ewha Womans Univ. (Korea, Republic of); S. Svertilov, N. Vedenkin, Moscow State Univ. (Russian Federation); M.-Z. Wang, National Taiwan Univ. (Taiwan); I. Yashin, Lomonosov Moscow State Univ. (Russian Federation)

- 8443 2V **Design and implementation of the UFFO burst alert and trigger telescope** [8443-103]
 J. E. Kim, Ewha Womans Univ. (Korea, Republic of); S. Ahmad, P. Barrillon, Univ. of Paris-Sud 11 (France); S. Brandt, C. Budtz-Jørgensen, Technical Univ. of Denmark (Denmark); A. J. Castro-Tirado, Instituto de Astrofísica de Andalucía-CSIC (Spain); P. Chen, National Taiwan Univ. (United States); Y. J. Choi, KAIST (Korea, Republic of); P. Connell, Univ. of Valencia (Spain); S. Dagoret-Campagne, Univ. of Paris-Sud 11 (France); C. Eyles, Univ. of Valencia (United Kingdom); B. Grossan, Univ. of California, Berkeley (United States); M.-H. A. Huang, National United Univ. (Taiwan); A. Jung, S. Jeong, M. B. Kim, Ewha Womans Univ. (Korea, Republic of); S.-W. Kim, Yonsei Univ. (Korea, Republic of); Y. W. Kim, Ewha Womans Univ. (Korea, Republic of); A. S. Krasnov, Moscow State Univ. (Russian Federation); J. Lee, H. Lim, Ewha Womans Univ. (Korea, Republic of); E. V. Linder, Ewha Womans Univ. (Korea, Republic of) and Lawrence Berkeley National Lab. (United States); T.-C. Liu, National Taiwan Univ., Taipei (Taiwan); N. Lund, Technical Univ. of Denmark (Denmark); K. W. Min, KAIST (Korea, Republic of); G. W. Na, Ewha Womans Univ. (Korea, Republic of); J. W. Nam, National Taiwan Univ. (Taiwan); M. I. Panasyuk, Moscow State Univ. (Russian Federation); I. H. Park, J. Ripa, Ewha Womans Univ. (Korea, Republic of); V. Reglero, J. M. Rodrigo, Univ. of Valencia (Spain); G. F. Smoot, Ewha Womans Univ. (Korea, Republic of) and Univ. of California, Berkeley (United States); J. E. Suh, Ewha Womans Univ. (Korea, Republic of); S. Svertilov, N. Vedenkin, Moscow State Univ. (Russian Federation); M.-Z. Wang, National Taiwan Univ. (Taiwan); I. Yashin, Moscow State Univ. (Russian Federation)

POSTER SESSION: UV MISSIONS AND TECHNOLOGIES

- 8443 2W **ISSIS: the imaging and slitless spectroscopy instrument for surveys in the World Space Observatory-Ultraviolet telescope** [8443-117]
 A. I. Gomez de Castro, N. Sanchez, P. Sestito, Univ. Complutense de Madrid (Spain); P. Rodriguez, M. T. Gomez, J. Seijas, SENER Ingeniería y Sistemas S.A. (Spain); F. Lopez-Martinez, Univ. Complutense de Madrid (Spain); J. Quintana, M. Ubierna, J. Muñoz, SENER Ingeniería y Sistemas S.A. (Spain)
- 8443 2X **MCP detector development for WSO-UV** [8443-119]
 S. Diebold, J. Barnstedt, Institut für Astronomie and Astrophysik, Univ. Tübingen (Germany); H. R. Elsener, EMPA (Switzerland); P. Ganz, Karlsruhe Institute of Technology (Germany); S. Hermanutz, C. Kalkuhl, N. Kappelmann, M. Pfeifer, Institut für Astronomie and Astrophysik, Univ. Tübingen (Germany); D. Schaadt, Clausthal Univ. of Technology (Germany); T. Schanz, Institut für Astronomie and Astrophysik, Univ. Tübingen (Germany); O. Tanirah, Karlsruhe Institute of Technology (Germany); K. Werner, Institut für Astronomie and Astrophysik, Univ. Tübingen (Germany)

- 8443 2Y **EXCEED: an extreme ultraviolet spectrometer onboard SPRINT-A** [8443-120]
G. Murakami, K. Yoshioka, A. Yamazaki, K. Uemizu, Japan Aerospace Exploration Agency (Japan); H. Ishii, K. Uji, I. Yoshikawa, The Univ. of Tokyo (Japan); M. Kagitani, F. Tsuchiya, Tohoku Univ. (Japan)
- 8443 2Z **Design of UV long-slit spectrometer** [8443-121]
Y. Bazhanov, E. Demura, N. Zacharova, Precision Systems and Instruments Corp. (Russian Federation)
- 8443 30 **Environmental testing of an all-reflective spatial heterodyne spectrometer for wide input angle measurements of H Ly- α at high spectral resolving power** [8443-122]
W. Harris, J. Corliss, Univ. of California, Davis (United States); Y. B  tr  mieux, Max-Planck-Institut f  r Astronomie (Germany); F. Roesler, Univ. of Wisconsin-Madison (United States)

POSTER SESSION: GAMMA-RAY MISSIONS AND TECHNOLOGIES

- 8443 31 **Expected performance of a Laue lens based on bent crystals** [8443-104]
V. Valsan, Univ. degli Studi di Ferrara (Italy) and Univ. de Sophia Antipolis (France); F. Frontera, E. Virgilli, Univ. degli Studi di Ferrara (Italy); V. Liccardo, Univ. degli Studi di Ferrara (Italy) and Univ. de Sophia Antipolis (France)
- 8443 32 **Characterization of bent crystals for Laue lenses** [8443-105]
V. Liccardo, Univ. degli Studi di Ferrara (Italy) and Univ. de Sophia Antipolis (France); E. Virgilli, F. Frontera, Univ. degli Studi di Ferrara (Italy); V. Valsan, Univ. degli Studi di Ferrara (Italy) and Univ. de Sophia Antipolis (France)
- 8443 33 **Bent crystals as high-reflectivity components for a Laue lens: basic concepts and experimental techniques** [8443-106]
V. Guidi, R. Camattari, I. Neri, Univ. degli Studi di Ferrara (Italy) and SENSOR Lab., CNR, IDASC (Italy); L. Lanzoni, Univ. degli Studi di San Marino (Italy)
- 8443 34 **Stack of curved crystals as optical component for hard x- and gamma-ray focusing through a Laue lens** [8443-107]
I. Neri, R. Camattari, V. Bellucci, V. Guidi, Univ. degli Studi di Ferrara (Italy) and SENSOR Lab., CNR - IDASC (Italy); P. Bastie, Institut Laue Langevin (France) and Univ. Joseph Fourier (France)
- 8443 35 **Quasi-mosaicity as a tool for focusing hard x-rays** [8443-108]
R. Camattari, V. Guidi, I. Neri, Univ. degli Studi di Ferrara (Italy) and SENSOR Lab., CNR, IDASC (Italy)
- 8443 36 **Development and performance of a gamma-ray imaging detector** [8443-109]
J. L. G  lvez, M. Hernanz, J. M.   lvarez, M. La Torre, L.   lvarez, D. Karel  n, Institut de Ci  ncies de l'Espai, CSIC-IEEC, Univ. Aut  noma de Barcelona (Spain); M. Lozano, G. Pellegrini, M. Ull  n, E. Cabruja, R. Mart  nez, Centro Nacional de Microelectr  nica IMB-CNM CSIC, Univ. Aut  noma de Barcelona (Spain); M. Chmeissani, C. Puigdem  ngols, Institut de F  sica d'Altes Energies, Univ. Aut  noma de Barcelona (Spain)

- 8443 37 **Development of a quasi-monoenergetic 6 MeV gamma facility** [8443-110]
S. F. Nowicki, NASA Goddard Space Flight Ctr. (United States) and Univ. of Michigan (United States); S. D. Hunter, J. G. Bodnarik, M. P. Dion, A. M. Parsons, NASA Goddard Space Flight Ctr. (United States); J. Schweitzer, Univ. of Connecticut (United States); S. Son, NASA Goddard Space Flight Ctr. (United States)
- 8443 38 **VAMOS** [8443-111]
A. Iriarte, Univ. Nacional Autónoma de México (Mexico); L. A. Martínez, Instituto de Astronomía, Univ. Nacional Autónoma de México (Mexico); R. Alfaro, Univ. Nacional Autónoma de México (Mexico)
- 8443 39 **A water quality monitoring system for HAWC** [8443-112]
F. Garfias, A. Bernal, S. Tinoco, A. Iriarte, Instituto de Astronomía, Univ. Nacional Autónoma de México (Mexico)
- 8443 3A **Simulations for a proposed gamma-ray space telescope using MEGALib** [8443-114]
S. Foley, Univ. College Dublin (Ireland) and Max-Planck-Institut für extraterrestrische Physik (Germany); A. Zoglauer, Space Sciences Lab., Univ. of California, Berkeley (United States); J. Greiner, G. Kanbach, Max-Planck-Institut für extraterrestrische Physik (Germany)
- 8443 3B **Background estimation in a wide-field background-limited instrument such as Fermi GBM** [8443-115]
G. Fitzpatrick, S. McBreen, Univ. College Dublin (Ireland); V. Connaughton, M. Briggs, The Univ. of Alabama in Huntsville (United States)

POSTER SESSION: SOLAR MISSIONS AND TECHNOLOGIES

- 8443 3C **In-band and out-of-band reflectance calibrations of the EUV multilayer mirrors of the atmospheric imaging assembly instrument aboard the Solar Dynamics Observatory** [8443-118]
R. Soufli, E. Spiller, Lawrence Livermore National Lab. (United States); D. L. Windt, Reflective X-Ray Optics LLC (United States); J. C. Robinson, Lawrence Livermore National Lab. (United States); E. M. Gullikson, Lawrence Berkeley National Lab. (United States); L. Rodriguez-de Marcos, Consejo Superior de Investigaciones Científicas (Spain); M. Fernandez-Perea, S. L. Baker, Lawrence Livermore National Lab. (United States); A. L. Aquila, F. J. Dollar, Lawrence Berkeley National Lab. (United States); J. Méndez, J. I. Larruquert, Consejo Superior de Investigaciones Científicas (Spain); L. Golub, Harvard-Smithsonian Ctr. for Astrophysics (United States); P. Boerner, Lockheed Martin Space Systems Co. (United States)
- 8443 3D **Design, performance prediction, and measurements of the interface region imaging spectrograph (IRIS) telescope** [8443-123]
W. A. Podgorski, P. N. Cheimets, L. Golub, Harvard-Smithsonian Ctr. for Astrophysics (United States); J. R. Lemen, A. M. Title, Lockheed Martin Space Systems Co. (United States)
- 8443 3E **Thermal design of interface region imaging spectrograph (IRIS) ULE primary mirror** [8443-124]
S. C. Park, Smithsonian Astrophysical Observatory, Harvard-Smithsonian Ctr. for Astrophysics (United States); C. H. Yanari, Lockheed Martin Solar and Astrophysics Lab. (United States); P. N. Cheimets, W. A. Podgorski, Smithsonian Astrophysical Observatory, Harvard-

Smithsonian Ctr. for Astrophysics (United States); J.-P. Wuelser, Lockheed Martin Space Systems Co. (United States)

- 8443 3F **Design, analysis, and performance verification of the interface region imaging spectrograph (IRIS) telescope primary mirror assembly** [8443-125]
E. N. Hertz, P. N. Cheimets, W. A. Podgorski, T. Perry, S. C. Park, H. W. Bergner Jr., R. Gates, V. Marquez, M. F. Honsa, Harvard-Smithsonian Ctr. for Astrophysics (United States)
- 8443 3G **Analysis of optical efficiency of METIS coronagraph telescope on board of the Solar Orbiter mission** [8443-126]
V. Polito, A. J. Corso, P. Zuppella, P. Nicolosi, Institute for Photonics and Nanotechnologies, CNR (Italy) and Univ. of Padova (Italy); S. Fineschi, E. Antonucci, INAF, Osservatorio Astronomico di Torino (Italy); D. L. Windt, Reflective X-Ray Optics LLC (United States); M. G. Pelizzo, Lab. for Ultraviolet and X-ray Optical Research, CNR, Institute for Photonics and Nanotechnologies (Italy) and Univ. of Padova (Italy)
- 8443 3H **METIS: a novel coronagraph design for the Solar Orbiter mission** [8443-127]
S. Fineschi, E. Antonucci, INAF, Osservatorio Astronomico di Torino (Italy); G. Naletto, Univ. degli Studi di Padova (Italy); M. Romoli, Univ. degli Studi di Firenze (Italy); D. Spadaro, INAF, Osservatorio Astrofisico di Catania (Italy); G. Nicolini, L. Abbo, INAF, Osservatorio Astronomico di Torino (Italy); V. Andretta, INAF, Osservatorio Astronomico di Capodimonte (Italy); A. Bemporad, INAF, Osservatorio Astronomico di Torino (Italy); A. Berlicki, Astronomical Institute of the ASCR, v.v.i. (Czech Republic); G. Capobianco, G. Crescenzo, INAF, Osservatorio Astronomico di Torino (Italy); V. Da Deppo, Consiglio Nazionale delle Ricerche (Italy); M. Focardi, F. Landini, Univ. degli Studi di Firenze (Italy); G. Massone, INAF, Osservatorio Astronomico di Torino (Italy); M. A. Malvezzi, Univ. degli Studi di Padova (Italy); J. D. Moses, U.S. Naval Research Lab. (United States); P. Nicolosi, Univ. degli Studi di Padova (Italy); M. Pancrazzi, Univ. degli Studi di Firenze (Italy); M.-G. Pelizzo, L. Poletto, Consiglio Nazionale delle Ricerche (Italy); U. H. Schühle, S. K. Solanki, Max-Planck-Institut für Sonnensystemforschung (Germany); D. Telloni, INAF, Osservatorio Astronomico di Torino (Italy); L. Teriaca, Max-Planck-Institut für Sonnensystemforschung (Germany); M. Uslenghi, INAF/IASF Milano (Italy)
- 8443 3I **A prototype of the UV detector for METIS on Solar Orbiter** [8443-128]
M. Uslenghi, S. Incorvaia, M. Fiorini, INAF/IASF Milano (Italy); U. H. Schühle, L. Teriaca, Max-Planck-Institut für Sonnensystemforschung (Germany); E. Wilkinson, Southwest Research Institute (United States); O. H. Siegmund, Sensor Sciences, LLC (United States) and Space Science Lab., Univ. of California, Berkeley (United States); E. Antonucci, S. Fineschi, INAF, Osservatorio Astronomico di Torino (Italy); G. Naletto, Univ. of Padova (Italy); G. Nicolini, INAF, Astrophysical Observatory of Torino (Italy); G. Nicolosi, Univ. degli Studi di Padova (Italy); M. Romoli, M. Focardi, Univ. degli Studi di Firenze (Italy)
- 8443 3J **Imaging polarimetry with the METIS coronagraph of the Solar Orbiter mission** [8443-129]
G. Crescenzo, S. Fineschi, G. Capobianco, G. Nicolini, G. Massone, INAF, Osservatorio Astronomico di Torino (Italy); M. A. Malvezzi, Univ. degli Studi di Pavia (Italy); F. Landini, M. Romoli, Univ. degli Studi di Firenze (Italy); E. Antonucci, INAF, Osservatorio Astronomico di Torino (Italy)

- 8443 3L **The spectrometer telescope for imaging x-rays on board the Solar Orbiter mission** [8443-131]
 A. O. Benz, Univ. of Applied Sciences and Arts Northwestern (Switzerland); S. Krucker, G. J. Hurford, Univ. of Applied Sciences and Arts Northwestern Switzerland (Switzerland) and Space Science Lab., Univ. of California, Berkeley (United States); N. G. Arnold, Univ. of Applied Sciences and Arts Northwestern Switzerland (Switzerland); P. Orleański, Univ. of Applied Sciences and Arts Northwestern Switzerland (Switzerland) and Space Research Ctr. (Poland); H.-P. Gröbelbauer, S. Klobner, L. Iseli, H. J. Wiehl, A. Csillaghy, L. Etesi, N. Hochmuth, M. Battaglia, Univ. of Applied Sciences and Arts Northwestern (Switzerland); M. Bednarzik, R. Resanovič, Lab. for Micro- and Nanotechnology, Paul Scherrer Institute (Switzerland); O. Grimm, G. Viertel, V. Commichau, ETH Zürich (Switzerland); A. Meuris, O. Limousin, S. Brun, CEA Saclay (France); N. Vilmer, LESIA (France); K. R. Skup, R. Graczyk, M. Stolarski, M. Michalska, W. Nowosielski, A. Cichocki, M. Mosdorf, K. Seweryn, A. Przepiórka, J. Sylwester, M. Kowalinski, Space Research Ctr. (Poland); T. Mrozek, Space Research Ctr. (Poland) and iLeibniz-Institut (Germany); P. Podgorski, Space Research Ctr. (Poland); G. Mann, H. Aurass, E. Popow, H. Önel, F. Dionies, S. Bauer, J. Rendtel, A. Warmuth, M. Woche, D. Plüschke, W. Bittner, J. Paschke, D. Wolker, Leibniz-Institut für Astrophysik Potsdam (Germany); H. F. Van Beek, HF Van Beek ConsultANCY (Netherlands); F. Farnik, J. Kasparova, Astronomical Institute of the ASCR, v.v.i. (Czech Republic); A. M. Veronig, I. W. Kienreich, Univ. of Graz (Austria); P. T. Gallagher, D. S. Bloomfield, Trinity College Dublin (Ireland); M. Piana, Univ. degli Studi di Genova (Italy); A. M. Massone, SPIN Genova, CNR (Italy); B. R. Dennis, NASA Goddard Space Flight Ctr. (United States); R. A. Schwarz, NASA Goddard Space Flight Ctr. (United States) and Catholic Univ. of American (United States); R. P. Lin, Space Sciences Lab., Univ. of California, Berkeley (United States) and Kyung Hee Univ. (Korea, Republic of)

POSTER SESSION: X-RAY OPTICS

- 8443 3N **Progress report on using magneto-strictive sputtered thin films to modify the shape of a x-ray telescope mirror** [8443-133]
 M. P. Ulmer, X. Wang, J. Cao, J. Savoie, B. Bellavia, M. E. Graham, S. Vaynman, Northwestern Univ. (United States)
- 8443 3O **Uniform coating of high aspect ratio surfaces through atomic layer deposition** [8443-134]
 M. Nolan, I. Povey, S. Elliot, N. Cordero, M. Pemble, Tyndall National Institute (Ireland); B. Shortt, M. Bavdaz, ESA/ESTEC (Netherlands)
- 8443 3P **Coatings with high 102.6-to-121.6 nm reflectance ratio** [8443-135]
 L. Rodríguez-de Marcos, J. I. Larruquert, J. A. Méndez, J. A. Aznárez, M. Vidal-Dasilva, S. García-Cortés, Instituto de Óptica-Consejo Superior de Investigaciones Científicas (Spain)
- 8443 3Q **Progress in new ultraviolet reflective coating techniques** [8443-136]
 M. Beasley, Univ. of Colorado at Boulder (United States); F. Greer, S. Nikzad, Jet Propulsion Lab. (United States)

Part 3

- 8443 3R **Corrosion-resistant high-reflectance Mg/SiC multilayer coatings for solar physics in the 25-80 nm wavelength region** [8443-137]
R. Soufli, M. Fernández-Perea, J. C. Robinson, S. L. Baker, J. Alameda, Lawrence Livermore National Lab. (United States); E. M. Gullikson, Lawrence Berkeley National Lab. (United States)
- 8443 3S **Reflective coating for lightweight x-ray optics** [8443-138]
K.-W. Chan, Ctr. for Research and Exploration in Space Science and Technology (United States) and Univ. of Maryland (United States); W. W. Zhang, NASA Goddard Space Flight Ctr. (United States); D. Windt, Reflective X-Ray Optics LLC (United States); M.-L. Hong, Stinger Ghaffarian Technologies, Inc. (United States); T. Saha, NASA Goddard Space Flight Ctr. (United States); R. McClelland, M. Sharpe, Stinger Ghaffarian Technologies, Inc. (United States); V. H. Dwivedi, NASA Goddard Space Flight Ctr. (United States)
- 8443 3V **Grazing-incidence imaging spectrograph for solar observations in the XUV domain** [8443-141]
F. Frassetto, S. Coraggia, P. Miotti, L. Poletto, NCR, Institute of Photonics and Nanotechnologies (Italy)
- 8443 3W **Mirror-concentrator for space telescope with wide field of view and "high" angular resolution for observation of ultrahigh energy cosmic rays and other atmospheric flashes** [8443-142]
S. A. Sharakin, B. A. Khrenov, P. A. Klimov, M. I. Panasyuk, Lomonosov State Univ., Skobeltsyn Institute of Nuclear Physics (Russian Federation); S. A. Potanin, Lomonosov State Univ., Sternberg Astronomical Institute (Russian Federation); I. V. Yashin, Lomonosov State Univ., Skobeltsyn Institute of Nuclear Physics (Russian Federation)
- 8443 3X **Development of the super-high angular resolution principle for x-ray imaging: experimental demonstrations** [8443-143]
C. Zhang, Z. Ling, National Astronomical Observatories (China); S.-N. Zhang, National Astronomical Observatories (China) and Institute of High Energy Physics (China)
- 8443 3Y **Design and analysis of modules for segmented X-ray optics** [8443-144]
R. S. McClelland, M. P. Biskach, SGT, Inc. (United States); K.-W. Chan, Ctr. for Research and Exploration in Space Science and Technology, Univ. of Maryland (United States); T. T. Saha, W. W. Zhang, NASA Goddard Space Flight Ctr. (United States)
- 8443 3Z **Precise alignment and permanent mounting of thin and lightweight X-ray segments** [8443-145]
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- 8443 41 **Resolution limits of transmission optics for x-ray astronomy** [8443-147]
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- 8443 43 **Development of four-stage x-ray telescope for DIOS mission** [8443-149]
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- 8443 44 **The Wolter telescope designer (WTD): a user-friendly web facility for the design of x-ray multishell telescopes** [8443-151]
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- 8443 48 **Updating the Chandra HETGS efficiencies using in-orbit observations** [8443-154]
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- 8443 4A **Performance evolution of the X-ray Imaging Spectrometers aboard the Suzaku X-ray astronomy satellite** [8443-156]
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- 8443 4C **The COS FUV channel: on-orbit performance trends and early characterization of a new detector lifetime position** [8443-158]
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- 8443 4D **On-ground calibration of AGILE-GRID with a photon beam: results and lessons for the future** [8443-159]
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A. Trois, INAF, Osservatorio Astronomico di Caligari (Italy); P. Valente, E. Vallazza, INFN Lab. Frascati (Italy); S. Vercellone, INAF/IASF Palermo (Italy); G. Barbiellini, Univ. degli Studi di Trieste, INFN (Italy); P. Caraveo, INAF/IASF Milano (Italy); E. Costa, G. De Paris, E. Del Monte, INAF/IASF Roma (Italy); G. Di Cocco, INAF/IASF Bologna (Italy); I. Donnarumma, Y. Evangelista, INAF/IASF Roma (Italy); A. Ferrari, Univ. degli Studi di Torino (Italy); M. Feroci, INAF/IASF Roma (Italy); M. Fiorini, INAF/IASF Milano (Italy); M. Giusti, INAF/IASF Roma (Italy); C. Labanti, INAF/IASF Bologna (Italy); I. Lapshov, F. Lazzarotto, INAF/IASF Roma (Italy); P. Lipari, INFN-Roma La Sapienza (Italy); F. Lucarelli, ASI Science Data Ctr. (Italy); S. Mereghetti, INAF/IASF Milano (Italy); E. Morelli, INAF/IASF Bologna (Italy); E. Moretti, Univ. Trieste and INFN Trieste (Italy); A. Morselli, INFN Roma Tor Vergata (Italy); L. Pacciani, INAF/IASF Roma (Italy); F. Perotti, INAF/IASF Milano (Italy); G. Piano, INAF/IASF Roma (Italy) and Univ. degli Studi di Roma Tor Vergata (Italy) and INFN (Italy); P. Picozza, Univ. degli Studi di Roma Tor Vergata (Italy) and INFN (Italy); M. Pilia, Univ. degli Studi dell'Insubria (Italy) and INAF, Osservatorio Astronomico di Cagliari (Italy); M. Rapisarda, ENEA Frascati (Italy); A. Rubini, S. Sabatini, P. Soffitta, E. Striani, INAF/IASF Roma (Italy); V. Vittorini, INAF/IASF Roma (Italy) and Univ. degli Studi di Roma Tor Vergata (Italy); D. Zanello, Univ. degli Studi di Roma La Sapienza (Italy); S. Colafrancesco, INAF, Osservatorio Astronomico di Roma (Italy) and Univ. of the Witwatersrand (South Africa); P. Giommi, C. Pittori, P. Santolamazza, F. Verrecchia, ASI Science Data Ctr. (Italy); L. Salotti, Agenzia Spaziale Italiana (Italy)

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A. W. Chen, INAF/IASF Milano (Italy); A. Argan, INAF/IASF Roma (Italy); A. Bulgarelli, INAF/IASF Bologna (Italy); P. W. Cattaneo, INFN (Italy); A. Giuliani, INAF/IASF Milano (Italy); C. Pittori, ASI Science Data Ctr. (Italy) and INAF, Osservatorio Astronomico di Roma (Italy); G. Pucella, ENEA (Italy); A. Trois, INAF, Osservatorio Astronomico di Cagliari (Italy); G. Barbiellini, Univ. degli Studi di Trieste and INFN (Italy); P. Caraveo, INAF/IASF Milano (Italy); S. Colafrancesco, INAF, Osservatorio Astronomico di Roma (Italy) and Univ. of the Witwatersrand, Johannesburg (South Africa); E. Costa, G. De Paris, E. Del Monte, INAF/IASF Roma (Italy); G. Di Cocco, INAF/IASF Bologna (Italy); I. Donnarumma, Y. Evangelista, INAF/IASF Roma (Italy); A. Ferrari, Univ. degli Studi di Torino (Italy); M. Feroci, INAF/IASF Roma (Italy); M. Fiorini, INAF/IASF-Milano (Italy); F. Fuschino, INAF/IASF Bologna (Italy); M. Galli, ENEA-Bologna (Italy); F. Gianotti, INAF/IASF Bologna (Italy); P. Giommi, ASI Science Data Ctr. (Italy); M. Giusti, INAF/IASF Roma (Italy); C. Labanti, INAF/IASF Bologna (Italy); I. Lapshov, F. Lazzarotto, INAF/IASF Roma (Italy); P. Lipari, INFN Roma La Sapienza (Italy); F. Longo, Univ. degli Studi di Trieste and INFN (Italy); F. Lucarelli, ASI Science Data Ctr. (Italy) and INAF, Osservatorio Astronomico di Roma (Italy); M. Marisaldi, INAF/IASF Bologna (Italy); S. Mereghetti, INAF/IASF-Milano (Italy); E. Morelli, INAF/IASF Bologna (Italy); E. Moretti, Univ. degli Studi di Trieste and INFN (Italy); A. Morselli, INFN Roma Tor Vergata (Italy); L. Pacciani, INAF/IASF Roma (Italy); A. Pellizzoni, INAF, Osservatorio Astronomico di Cagliari (Italy); F. Perotti, INAF/IASF Milano (Italy); G. Piano, INAF/IASF Roma (Italy) and Univ. Tor Vergata (Italy) and INFN Roma Tor Vergata (Italy); P. Picozza, Univ. degli Studi di Roma Tor Vergata (Italy) and INFN (Italy); M. Pilia, INAF, Osservatorio Astronomico di Cagliari (Italy) and ASTRON, Netherlands Institute for Radio Astronomy (Netherlands); M. Prest, Univ. degli Studi Dell'Insubria (Italy); M. Rapisarda, ENEA Frascati (Italy); A. Rappoldi, INFN-Pavia (Italy); A. Rubini, S. Sabatini, INAF/IASF-Roma (Italy); P. Santolamazza, ASI Science Data Ctr. (Italy) and INAF, Osservatorio Astronomico di Roma (Italy); P. Soffitta, E. Striani, INAF/IASF Roma (Italy); M. Trifoglio, INAF/IASF Bologna (Italy); L. Salotti, Agenzia Spaziale Italiana (Italy); E. Vallazza, Univ. degli Studi di Trieste and INFN (Italy); S. Vercellone, INAF/IASF Palermo (Italy); F. Verrecchia, ASI Science Data Center (Italy) and INAF, Osservatorio Astronomico di Roma (Italy); V. Vittorini, INAF/IASF Roma (Italy) and Univ. degli Studi di Roma Tor Vergata (Italy); D. Zanello, INFN-Roma La Sapienza (Italy)

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- 8443 4F **Chromospheric Lyman-alpha spectro-polarimeter (CLASP) [8443-161]**
R. Kano, T. Bando, National Astronomical Observatory of Japan (Japan); N. Narukage, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); R. Ishikawa, S. Tsuneta, Y. Katsukawa, M. Kubo, S. Ishikawa, H. Hara, National Astronomical Observatory of Japan (Japan); T. Shimizu, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); Y. Suematsu, National Astronomical Observatory of Japan (Japan); K. Ichimoto, Kwasan and Hido Observatories, Kyoto Univ. (Japan); T. Sakao, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); M. Goto, National Institute for Fusion Science (Japan); Y. Kato, S. Imada, National Astronomical Observatory of Japan (Japan); K. Kobayashi, The Univ. of Alabama in Huntsville (United States); T. Holloway, A. Winebarger, J. Cirtain, NASA Marshall Space Flight Ctr. (United States); B. De Pontieu, Lockheed Martin Solar and Astrophysics Lab. (United States); R. Casini, National Ctr. for Atmospheric Research (United States); J. Trujillo Bueno, Instituto de Astrofísica de Canarias (Spain); J. Štěpán, Astronomical Institute of the ASCR, v.v.i. (Czech Republic); R. Manso Sainz, L. Belluzzi, A. Asensio Ramos, Instituto de Astrofísica de Canarias (Spain); F. Auchère, Institut d'Astrophysique Spatiale, CNRS, Univ. Paris-Sud 11 (France); M. Carlsson, Institute of Theoretical Astrophysics, Univ. of Oslo (Norway)
- 8443 4G **X-ray γ -ray polarimetry small satellite PolariS [8443-162]**
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- 8443 4H **The Gamma-Ray Imager/Polarimeter for Solar flares (GRIPS) [8443-163]**
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- 8443 4K **GEMS x-ray polarimeter performance simulations [8443-166]**
W. H. Baumgartner, Univ. of Maryland, Baltimore County (United States) and NASA Goddard Space Flight Ctr. (United States); T. Strohmayer, T. Kallman, NASA Goddard Space Flight Ctr. (United States); J. K. Black, Rock Creek Scientific (United States) and NASA Goddard Space Flight Ctr. (United States); J. E. Hill, J. H. Swank, K. Jahoda, NASA Goddard Space Flight Ctr. (United States)
- 8443 4L **Development of bent crystal for imaging polarimetry [8443-167]**
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- 8443 4M **A commercial graphite sheet to diffract and polarize X-rays** [8443-168]
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- 8443 4N **Measuring x-ray polarization in the presence of systematic effects: known background** [8443-169]
R. F. Elsner, S. L. O'Dell, M. C. Weisskopf, NASA Marshall Space Flight Ctr. (United States)
- 8443 4O **A 3D CZT hard x-ray polarimeter for a balloon-borne payload** [8443-170]
E. Caroli, INAF/IASF Bologna (Italy); J. M. Alvarez, IEEC, CSIC (Spain); N. Auricchio, INAF/IASF Bologna (Italy); C. Budtz-Jørgensen, DTU Space (Denmark); R. M. Curado da Silva, LIP (Portugal); S. Del Sordo, INAF/IASF Palermo (Italy); P. Ferrando, P. Laurent, O. Limousin, CEA Saclay (France); J. L. Galvèz, IEEC, CSIC (Spain); C. P. Gloster, LIP (Portugal); M. Hernanz, J. Isern, IEEC, CSIC (Spain); I. Kuvvetli, DTU Space (Denmark); J. M. Maia, LIP (Portugal); A. Meuris, CEA Saclay (France); J. B. Stephen, INAF/IASF Bologna (Italy); A. Zappettini, IMEM, CNR (Italy)
- 8443 4P **A conceptual design of hard X-ray focal plane detector for simultaneous x-ray polarimetric, spectroscopic, and timing measurements** [8443-171]
S. V. Vadawale, T. Chattopadhyay, Physical Research Lab. (India); J. Pendharkar, Indian Institute of Tropical Meteorology (India)
- 8443 4Q **POLAR: the first dedicated gamma-ray burst polarization experiment** [8443-172]
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- 8443 4R **Tests and calibration on ultra violet imaging telescope (UVIT)** [8443-173]
A. Kumar, Indian Institute of Astrophysics (India); S. K. Ghosh, National Ctr. for Radio Astrophysics, Tata Institute of Fundamental Research (India); P. U. Kamath, Indian Institute of Astrophysics (India); J. Postma, Univ. of Calgary (Canada); S. Kathiravan, P. K. Mahesh, S. Nagbhushana, Indian Institute of Astrophysics (India); K. H. Navalgund, ISRO Satellite Ctr. (India); N. Rajkumar, M. N. Rao, Indian Institute of Astrophysics (India); K. S. Sarma, ISRO Satellite Ctr. (India); S. Sriram, C. S. Stalin, Indian Institute of Astrophysics (India); S. N. Tandon, Indian Institute of Astrophysics (India) and Inter Univ. Ctr. for Astronomy and Astrophysics (India)

- 8443 4S **Radiometric calibration of PHEBUS: model and results** [8443-174]
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M. G. Pelizzo, Luxor Lab., CNR, IFN (Italy) and Univ. of Padua (Italy); V. Polito, Univ. of Padua
(Italy); E. Quémerais, J. L. Maria, J. F. Mariscal, N. Rouanet, LATMOS, CNRS (France)
- 8443 4T **LEO radiation environment and the design of the micro-channel-plate x-ray telescope
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E. Perinati, C. Tenzer, A. Santangelo, Institut für Astronomie und Astrophysik, Univ. Tübingen
(Germany); B. Cordier, D. Gotz, CEA (France); G. W. Fraser, J. P. Osborne, Univ. of Leicester
(United Kingdom)
- 8443 4U **Prospects for the 2014/2015 Nuclear Compton Telescope balloon campaign** [8443-176]
A. Lowell, S. Boggs, A. Zoglauer, N. Barriere, Space Sciences Lab., Univ. of California,
Berkeley (United States); M. Amman, P. Luke, Lawrence Berkeley National Lab. (United
States); P. von Ballmoos, P. Jean, Institut de Recherche en Astrophysique et Planétologie
(France); H. K. Chang, J. L. Chiu, J. S. Liang, National Tsing Hua Univ. (Taiwan)
- 8443 4V **The x-ray advanced concepts testbed (XACT) sounding rocket payload** [8443-177]
K. Gendreau, NASA Goddard Space Flight Ctr. (United States); Z. Arzoumanian, NASA
Goddard Space Flight Ctr. (United States) and CRESST/USRA (United States); F. Asami,
RIKEN (Japan) and Tokyo Univ. of Science (Japan); R. Baker, NASA Goddard Space Flight
Ctr. (United States); E. Balsamo, NASA Goddard Space Flight Ctr. (United States) and
CRESST, UMBC (United States); K. Black, NASA Goddard Space Flight Ctr. (United States)
and Rock Creek Scientific (United States); C. Duran-Aviles, NASA Goddard Space Flight
Ctr. (United States); T. Enoto, RIKEN (Japan); K. Gregory, NASA Goddard Space Flight Ctr.
(United States); D. Hahne, NASA Goddard Space Flight Ctr. (United States) and Saitama
Univ. (Japan); A. Hayato, NASA Goddard Space Flight Ctr. (United States) and RIKEN
(Japan); J. Hill, F. Huegel, NASA Goddard Space Flight Ctr. (United States); T. Iwahashi,
Tokyo Univ. of Science (Japan); W. Iwakiri, Saitama Univ. (Japan); K. Jahoda, NASA
Goddard Space Flight Ctr. (United States); L. Jalota, NASA Goddard Space Flight Ctr.
(United States) and CRESST, UMBC (United States); P. Kaaret, The Univ. of Iowa (United
States); K. Kaneko, Kogakuin Univ. (Japan); S. Kenyon, NASA Goddard Space Flight Ctr.
(United States); T. Kitaguchi, RIKEN (Japan); R. Koenecke, NASA Goddard Space Flight Ctr.
(United States) and Adnet Systems (United States); T. Kohmura, Kogakuin Univ. (Japan);
T. Okajima, L. Olsen, F. Porter, K. Rush, P. Serlemitsos, NASA Goddard Space Flight Ctr.
(United States); Y. Soong, NASA Goddard Space Flight Ctr. (United States) and
CRESST/USRA (United States); Y. Takeuchi, RIKEN (Japan) and Tokyo Univ. of Science
(Japan); T. Tamagawa, CRESST, Univ. of Maryland, Baltimore County (United States);
S. Yamada, RIKEN (Japan); A. Yoshikawa, RIKEN (Japan) and Tokyo Univ. of Science
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- 8443 4X **Polarization studies with NuSTAR** [8443-181]
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B. Grefenstette, F. A. Harrison, K. K. Madsen, California Institute of Technology (United
States); M. Perri, S. Puccetti, ASI Science Data Ctr. (Italy); A. Zoglauer, Space Sciences Lab.,
California Institute of Technology (United States)

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- 8443 50 **Determination of the eROSITA mirror half energy width (HEW) with subpixel resolution** [8443-185]
K. Dennerl, W. Burkert, V. Burwitz, M. Freyberg, P. Friedrich, G. Hartner, Max-Planck-Institut für extraterrestrische Physik (Germany)
- 8443 51 **Calibration of the eROSITA calibration source** [8443-186]
M. J. Freyberg, B. Budau, V. Burwitz, K. Dennerl, G. Hartner, A. von Kienlin, B. Menz, B. Mican, Max-Planck-Institut für extraterrestrische Physik (Germany)
- 8443 52 **The thermal control system of the x-ray telescope eROSITA on Spektrum-Roentgen-Gamma** [8443-187]
M. Fürmetz, J. Eder, E. Pfeffermann, P. Predehl, L. Tiedemann, Max-Planck-Institut für extraterrestrische Physik (Germany)

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- 8443 53 **Calibration sources for the soft x-ray spectrometer instrument on ASTRO-H** [8443-188]
C. P. de Vries, P. Lowes, J. W. den Herder, H. Aarts, D. Haas, SRON Netherlands Institute for Space Research (Netherlands); K. Mitsuda, N. Y. Yamasaki, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); R. Kelley, C. Kilbourne, K. Gendreau, NASA Goddard Space Flight Ctr. (United States)
- 8443 54 **The Canadian Astro-H metrology system** [8443-189]
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- 8443 55 **Imaging and spectral performance of CdTe double-sided strip detectors for the hard x-ray imager onboard ASTRO-H** [8443-190]
K. Hagino, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan) and Univ. of Tokyo (Japan); H. Odaka, G. Sato, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); S. Watanabe, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan) and Univ. of Tokyo (Japan); S. Takeda, M. Kokubun, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); T. Fukuyama, S. Saito, T. Sato, Y. Ichinohe, T. Takahashi, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan) and Univ. of Tokyo (Japan); T. Nakano, K. Nakazawa, K. Makishima, The Univ. of Tokyo (Japan); H. Tajima, Nagoya Univ. (Japan); T. Tanaka, Kyoto Univ. (Japan); K. Ishibashi, T. Miyazawa, M. Sakai, K. Sakanobe, H. Kato, S. Takizawa, Nagoya Univ. (Japan); K. Uesugi, Japan Synchrotron Radiation Research Institute (Japan)
- 8443 56 **A Monte Carlo simulation framework to study ASTRO-H in-orbit radiation and detector responses based on Geant4 toolkit** [8443-191]
M. Ozaki, H. Odaka, T. Sato, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan); T. Yasuda, Saitama Univ. (Japan); M. Asai, SLAC National Accelerator Lab., Stanford Univ. (United States); K. Hiragi, T. Mizuno, Hiroshima Univ. (Japan); H. Mori, Nagoya Univ. (Japan); Y. Terada, Saitama Univ. (Japan); A. Furuzawa, Nagoya Univ. (Japan)

- 8443 57 **A ground calibration of the engineering model of the SXT onboard ASTRO-H using the ISAS 30m pencil beam facility** [8443-192]
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