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Space Telescopes and Instrumentation 2010: Ultraviolet to Gamma Ray

**Monique Arnaud
Stephen S. Murray
Tadayuki Takahashi**
Editors

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Contents

Part One

- xxxi *Conference Committee*
- xxxv *Unknowns and unknown unknowns: from dark sky to dark matter and dark energy (Plenary Paper) [7733-501]*
Y. Suto, The Univ. of Tokyo (Japan)
- xlvi *Optical synoptic telescopes: new science frontiers (Plenary Paper) [7733-502]*
J. A. Tyson, Univ. of California, Davis (United States)

SESSION 1 UV MISSIONS AND TECHNOLOGIES

- 7732 02 **Fabrication of FORTIS [7732-01]**
S. R. McCandliss, B. Fleming, M. E. Kaiser, J. Kruk, P. D. Feldman, The Johns Hopkins Univ. (United States); A. S. Kuttyrev, M. J. Li, P. A. Goodwin, D. Rapchun, E. Lyness, A. D. Brown, H. Moseley, NASA Goddard Space Flight Ctr. (United States); O. Siegmund, J. Vallerger, Univ. of California, Berkeley (United States)
- 7732 03 **Large-format high-spatial resolution cross-strip readout MCP detectors for UV astronomy [7732-02]**
J. Vallerger, Univ. of California, Berkeley (United States); R. Raffanti, Techne Instruments Inc. (United States); A. Tremsin, O. Siegmund, J. McPhate, Univ. of California, Berkeley (United States); G. Varner, Univ. of Hawaii (United States)
- 7732 05 **FIREBALL: the Faint Intergalactic medium Redshifted Emission Balloon: overview and first science flight results [7732-04]**
B. Milliard, Lab. d'Astrophysique de Marseille (France); D. C. Martin, California Institute of Technology (United States); D. Schiminovich, Columbia Univ. (United States); J. Evrard, Ctr. National d'Études Spatiales (France); M. Matuszewski, S. Rahman, California Institute of Technology (United States); S. Tuttle, Columbia Univ. (United States); R. McLean, California Institute of Technology (United States); J.-M. Deharveng, Lab. d'Astrophysique de Marseille (France); F. Mirc, Ctr. National d'Études Spatiales (France); R. Grange, Lab. d'Astrophysique de Marseille (France); R. Chave, Robert Chave Applied Physics Inc. (United States)
- 7732 06 **Colorado High-resolution Echelle Stellar Spectrograph (CHESS) [7732-05]**
M. Beasley, E. Burgh, K. France, Ctr. for Astrophysics and Space Astronomy, Univ. of Colorado at Boulder (United States)
- 7732 07 **The Diffuse Interstellar Cloud Experiment (DICE): integration and first-look data [7732-06]**
E. Schindhelm, E. Burgh, R. Kane, B. Gantner, S. LeVine, M. Beasley, J. Green, Ctr. for Astrophysics and Space Astronomy, Univ. of Colorado at Boulder (United States)

SESSION 2 X-RAY OBSERVATORIES AND OPTICS

- 7732 09 **X-ray telescope design and technology: what the future holds (Invited Paper)** [7732-08]
R. Willingale, Univ. of Leicester (United Kingdom)
- 7732 0A **Foil x-ray mirrors for astronomical observations: still an evolving technology** [7732-09]
P. J. Serlemitsos, NASA Goddard Space Flight Ctr. (United States); Y. Soong, NASA Goddard Space Flight Ctr. (United States) and Universities Space Research Association (United States); T. Okajima, NASA Goddard Space Flight Ctr. (United States) and The Johns Hopkins Univ. (United States); D. J. Hahne, NASA Goddard Space Flight Ctr. (United States) and Prime Circuits Inc. (United States)
- 7732 0B **Light weight optics made by glass thermal forming for future x-ray telescopes** [7732-10]
A. Winter, M. Vongehr, P. Friedrich, Max-Planck-Institute for Extraterrestrial Physics (Germany)
- 7732 0C **Hot slumping glass technology for the grazing incidence optics of future missions with particular reference to IXO** [7732-11]
M. Ghigo, S. Basso, Osservatorio Astronomico di Brera (Italy); M. Bavdaz, European Space Research and Technology Ctr. (Netherlands); P. Conconi, O. Citterio, Osservatorio Astronomico di Brera (Italy); M. Civitani, Osservatorio Astronomico di Brera (Italy) and Insubria Univ. (Italy); P. Friedrich, Max-Planck-Institut für extraterrestrische Physik (Germany); D. Gallieni, A.D.S. International S.r.l. (Italy); B. Guldemann, European Space Research and Technology Ctr. (Netherlands); F. Martelli, BCV Progetti S.r.l. (Italy); R. Negri, G. Pagano, Osservatorio Astronomico di Brera (Italy) and Politecnico di Milano (Italy); G. Pareschi, Osservatorio Astronomico di Brera (Italy); G. Parodi, BCV Progetti S.r.l. (Italy); L. Proserpio, Osservatorio Astronomico di Brera (Italy) and Insubria Univ. (Italy); B. Salmaso, Osservatorio Astronomico di Brera (Italy); F. Scaglione, Osservatorio Astronomico di Brera (Italy) and Politecnico di Milano (Italy); D. Spiga, G. Tagliaferri, Osservatorio Astronomico di Brera (Italy); L. Terzi, Osservatorio Astronomico di Brera (Italy) and Politecnico di Milano (Italy); M. Tintori, A.D.S. International S.r.l. (France); M. Vongehr, Max-Planck-Institut für extraterrestrische Physik (Germany); E. Wille, European Space Research and Technology Ctr. (Netherlands); A. Winter, Max-Planck-Institut für extraterrestrische Physik (Germany); A. Zambra, Osservatorio Astronomico di Brera (Italy)
- 7732 0D **Design and development of thin quartz glass WFXT polynomial mirror shells by direct polishing** [7732-12]
L. Proserpio, Osservatorio Astronomico di Brera (Italy) and Insubria Univ. (Italy); S. Campana, O. Citterio, Osservatorio Astronomico di Brera, INAF (Italy); M. Civitani, Osservatorio Astronomico di Brera (Italy) and Insubria Univ. (Italy); H. Combrinck, Zeeko Ltd. (United Kingdom); P. Conconi, V. Cotroneo, Osservatorio Astronomico di Brera (Italy); R. Freeman, Zeeko Ltd. (United Kingdom); P. Langstrof, Heraeus Quarzglas GmbH & Co. KG (Germany); E. Mattaini, INAF - IASF Milano (Italy); R. Morton, Zeeko Ltd. (United Kingdom); B. Oberle, Heraeus Quarzglas GmbH & Co. KG (Germany); G. Pareschi, Osservatorio Astronomico di Brera (Italy); G. Parodi, BCV Progetti S.r.l. (Italy); C. Pels, C. Schenk, R. Stock, Heraeus Quarzglas GmbH & Co. KG (Germany); G. Tagliaferri, Osservatorio Astronomico di Brera (Italy)

SESSION 3 X-RAY POLARIMETRY

- 7732 0E **On understanding the figures of merit for detection and measurement of x-ray polarization** [7732-13]
M. C. Weisskopf, R. F. Elsner, S. L. O'Dell, NASA Marshall Space Flight Ctr. (United States)
- 7732 0F **Broadband soft x-ray polarimetry** [7732-14]
H. L. Marshall, R. K. Heilmann, N. S. Schulz, K. D. Murphy, Massachusetts Institute of Technology (United States)
- 7732 0G **Hard x-ray polarimetry with HX-POL** [7732-15]
A. B. Garson III, K. Lee, J. Martin, M. Beilicke, Washington Univ. in St. Louis and the McDonnell Ctr. for Space Sciences (United States); E. Wulf, E. Novikova, U.S. Naval Research Lab. (United States); H. S. Krawczynski, Washington Univ. in St. Louis and the McDonnell Ctr. for Space Sciences (United States)

SESSION 4 GAMMA-RAY OBSERVATORIES

- 7732 0H **The building of Fermi-LAT (Invited Paper)** [7732-16]
W. N. Johnson, U.S. Naval Research Lab. (United States)
- 7732 0I **The tracker of the Fermi Large Area Telescope** [7732-17]
J. Bregeon, L. Baldini, Istituto Nazionale di Fisica Nucleare (Italy)
- 7732 0J **The calorimeter of the Fermi Large Area Telescope** [7732-18]
J. E. Grove, W. N. Johnson, U.S. Naval Research Lab. (United States)

SESSION 5 ASTROPHYSICAL SCIENCE DRIVERS FOR NEW OBSERVATORIES

- 7732 0L **The origin of the elements as seen through supernova remnants (Invited Paper)** [7732-20]
A. Decourchelle, Lab. AIM, CEA/IRFU, CNRS/INSU, Univ. Paris VII (France)

SESSION 6 SOLAR MISSIONS AND TECHNOLOGIES

- 7732 0P **First light of SWAP on-board PROBA2** [7732-24]
J.-P. Halain, Ctr. Spatial de Liège, Univ. de Liège (Belgium); D. Berghmans, Royal Observatory of Belgium (Belgium); J.-M. Defise, E. Renotte, T. Thibert, E. Mazy, P. Rochus, Ctr. Spatial de Liège, Univ. de Liège (Belgium); B. Nicula, Royal Observatory of Belgium (Belgium); A. De Groof, Royal Observatory of Belgium (Belgium) and European Space Research and Technology Ctr. (Netherlands); D. Seaton, U. Schühle, Max-Planck-Institut für Sonnensystemforschung (Germany)
- 7732 0Q **Development of double-sided silicon strip detectors for solar hard x-ray observation** [7732-25]
S. Saito, S. Ishikawa, S. Watanabe, H. Odaka, S. Sugimoto, T. Fukuyama, Japan Aerospace Exploration Agency (Japan) and The Univ. of Tokyo (Japan); M. Kokubun, The Univ. of Tokyo (Japan); T. Takahashi, Japan Aerospace Exploration Agency (Japan) and The Univ. of Tokyo (Japan); Y. Terada, Saitama Univ. (Japan); H. Tajima, T. Tanaka, Kavli Institute for Particle Astrophysics and Cosmology, Stanford Univ. (United States); S. Krucker, Univ. of California,

Berkeley (United States); S. Christe, NASA Goddard Space Flight Ctr. (United States); S. McBride, L. Glesener, Univ. of California, Berkeley (United States)

- 7732 OR **The technical challenges of the Solar-Orbiter EUI instrument** [7732-26]
J.-P. Halain, P. Rochus, Ctr. Spatial de Liège, Univ. de Liège (Belgium); T. Appourchaux, Institut d'Astrophysique Spatiale (France); D. Berghmans, Royal Observatory of Belgium (Belgium); L. Harra, Mullard Space Science Lab. (United Kingdom); U. Schühle, Max-Planck-Institut für Sonnensystemforschung (Germany); F. Auchère, Institut d'Astrophysique Spatiale (France); A. Zhukov, Royal Observatory of Belgium (Belgium); E. Renotte, J.-M. Defise, L. Rossi, K. Fleury-Frenette, L. Jacques, Ctr. Spatial de Liège, Univ. de Liège (Belgium); J.-F. Hochedez, A. Ben Moussa, Royal Observatory of Belgium (Belgium)

SESSION 7 MEDIUM X-RAY OBSERVATORIES I

- 7732 OS **The Nuclear Spectroscopic Telescope Array (NuSTAR)** [7732-27]
F. A. Harrison, California Institute of Technology (United States); S. Boggs, Univ. of California, Berkeley (United States); F. Christensen, DTU Space (Denmark); W. Craig, Univ. of California, Berkeley (United States) and Lawrence Livermore National Lab. (United States); C. Hailey, Columbia Univ. (United States); D. Stern, Jet Propulsion Lab. (United States); W. Zhang, L. Angelini, NASA Goddard Space Flight Ctr. (United States); H. An, Columbia Univ. (United States); V. Bhalereo, California Institute of Technology (United States); N. Brejnholt, DTU Space (Denmark); L. Cominsky, Sonoma State Univ. (United States); W. R. Cook, California Institute of Technology (United States); M. Doll, Columbia Univ. (United States); P. Giommi, Agenzia Spaziale Italiana (Italy); B. Grefenstette, California Institute of Technology (United States); A. Hornstrup, DTU Space (Denmark); V. Kaspi, McGill Univ. (Canada); Y. Kim, Jet Propulsion Lab. (United States); T. Kitaguchi, California Institute of Technology (United States); J. Koglin, Columbia Univ. (United States); C. C. Liebe, Jet Propulsion Lab. (United States); G. Madejski, SLAC, Stanford Univ. (United States); K. Kruse Madsen, P. Mao, California Institute of Technology (United States); D. Meier, Jet Propulsion Lab. (United States); H. Miyasaka, California Institute of Technology (United States); K. Mori, Columbia Univ. (United States); M. Perri, Agenzia Spaziale Italiana (Italy); M. Pivovarov, Lawrence Livermore National Lab. (United States); S. Puccetti, Agenzia Spaziale Italiana (Italy); V. Rana, California Institute of Technology (United States); A. Zoglauer, Univ. of California, Berkeley (United States)
- 7732 OT **The Nuclear Spectroscopic Telescope Array (NuSTAR): optics overview and current status** [7732-28]
C. J. Hailey, H. An, K. L. Blaedel, Columbia Univ. (United States); N. F. Brejnholt, F. E. Christensen, Danish Technical Univ. (Denmark); W. W. Craig, Lawrence Livermore National Lab. (United States); T. A. Decker, M. Doll, Columbia Univ. (United States); J. Gum, NASA Goddard Space Flight Ctr. (United States); J. E. Koglin, Columbia Univ. (United States); C. P. Jensen, Danish Technical Univ. (Denmark); L. Hale, K. Mori, Columbia Univ. (United States); M. J. Pivovarov, Lawrence Livermore National Lab. (United States); M. Sharpe, NASA Goddard Space Flight Ctr. (United States); M. Stern, G. Tajiri, Columbia Univ. (United States); W. W. Zhang, NASA Goddard Space Flight Ctr. (United States)
- 7732 OU **eROSITA on SRG** [7732-29]
P. Predehl, R. Andritschke, H. Böhringer, W. Bornemann, H. Bräuninger, H. Brunner, M. Brusa, W. Burkert, V. Burwitz, N. Cappelluti, Max-Planck-Institut für extraterrestrische Physik (Germany); E. Churazov, Max-Planck-Institut für Astrophysik (Germany); K. Dennerl, J. Eder, J. Elbs, M. Freyberg, P. Friedrich, M. Fürmetz, R. Gaida, O. Hölker, G. Hartner,

Max-Planck-Institut für extraterrestrische Physik (Germany); G. Hasinger, Max-Planck-Institut für Plasma Physik (Germany); S. Hermann, H. Huber, Max-Planck-Institut für extraterrestrische Physik (Germany); E. Kendziorra, Institut für Astronomie und Astrophysik, Eberhard Karls Univ. Tübingen (Germany); A. von Kienlin, W. Kink, Max-Planck-Institut für extraterrestrische Physik (Germany); I. Kreykenbohm, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany); G. Lamer, Astrophysikalisches Institut Potsdam (Germany); I. Lapchov, Space Research Institute (Russian Federation); K. Lehmann, Institut für Astronomie und Astrophysik, Eberhard Karls Univ. Tübingen (Germany); N. Meidinger, B. Mican, Max-Planck-Institut für extraterrestrische Physik (Germany); J. Mohr, Max-Planck-Institut für extraterrestrische Physik (Germany) and Ludwig-Maximilians-Univ. München (Germany); M. Mühlegger, S. Müller, K. Nandra, Max-Planck-Institut für extraterrestrische Physik (Germany); M. Pavlinsky, Space Research Institute (Russian Federation); E. Pfeffermann, Max-Planck-Institut für extraterrestrische Physik (Germany); T. Reiprich, Rheinische Friedrich-Wilhelms-Univ. Bonn (Germany); J. Robrade, Univ. Hamburg (Germany); C. Rohé, Max-Planck-Institut für extraterrestrische Physik (Germany); A. Santangelo, Institut für Astronomie und Astrophysik, Eberhard Karls Univ. Tübingen (Germany); G. Schächner, Max-Planck-Institut für extraterrestrische Physik (Germany); T. Schanz, Institut für Astronomie und Astrophysik, Eberhard Karls Univ. Tübingen (Germany); C. Schmid, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany); J. Schmitt, Univ. Hamburg (Germany); R. Schreib, F. Schrey, Max-Planck-Institut für extraterrestrische Physik (Germany); A. Schwöpe, M. Steinmetz, Astrophysikalisches Institut Potsdam (Germany); L. Strüder, Max-Planck-Institut für extraterrestrische Physik (Germany); R. Sunyaev, Max-Planck-Institut für Astrophysik (Germany); C. Tenzer, Institut für Astronomie und Astrophysik, Eberhard Karls Univ. Tübingen (Germany); L. Tiedemann, M. Vongehr, Max-Planck-Institut für extraterrestrische Physik (Germany); J. Wilms, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany)

7732 OW **The Gravity and Extreme Magnetism Small Explorer** [7732-31]
K. Jahoda, NASA Goddard Space Flight Ctr. (United States)

7732 OX **The GEMS photoelectric x-ray polarimeters** [7732-32]
J. K. Black, Rock Creek Scientific (United States) and NASA Goddard Space Flight Ctr. (United States); P. Deines-Jones, NASA Goddard Space Flight Ctr. (United States); J. E. Hill, CRESST/Universities Space Research Association (United States) and NASA Goddard Space Flight Ctr. (United States); T. Iwahashi, RIKEN (Japan) and Tokyo Univ. of Science (Japan); K. Jahoda, NASA Goddard Space Flight Ctr. (United States); P. Kaaret, The Univ. of Iowa (United States); T. R. Kallman, NASA Goddard Space Flight Ctr. (United States); C. J. Martoff, Temple Univ. (United States); Z. Prieskorn, The Univ. of Iowa (United States); J. Swank, NASA Goddard Space Flight Ctr. (United States); T. Tamagawa, RIKEN (Japan) and Tokyo Univ. of Science (Japan)

SESSION 8 MEDIUM X-RAY OBSERVATORIES II

7732 OY **Early results of MAXI (Monitor of All-sky X-ray Image) on ISS (Invited Paper)** [7732-33]
M. Matsuoka, RIKEN (Japan) and Japan Aerospace Exploration Agency (Japan); T. Mihara, M. Sugizaki, M. Suzuki, Y. E. Nakagawa, T. Yamamoto, T. Sootome, RIKEN (Japan); K. Kawasaki, S. Ueno, H. Tomida, M. Kohama, M. Ishikawa, Y. Adachi, Y. Itamoto, Y. Kobayashi, H. Katayama, Japan Aerospace Exploration Agency (Japan); N. Kawai, M. Morii, K. Sugimori, Tokyo Institute of Technology (Japan); H. Tsunemi, M. Kimura, Osaka Univ. (Japan); A. Yoshida, K. Yamaoka, S. Nakahira, Aoyama Gakuin Univ. (Japan); H. Negoro, H. Ozawa, F. Suwa, M. Nakajima, Nihon Univ. (Japan); Y. Ueda, N. Isobe, S. Eguchi, K. Hiroi, Kyoto Univ. (Japan); K. Ebisawa, Japan Aerospace Exploration Agency

(Japan); A. Daikyuji, M. Yamauchi, Univ. of Miyazaki (Japan); A. Uzawa, T. Matsumura, K. Yamazaki, Y. Tsuboi, Chuo Univ. (Japan)

7732 0Z **The ASTRO-H Mission [7732-34]**

T. Takahashi, K. Mitsuda, Japan Aerospace Exploration Agency (Japan); R. Kelley, NASA Goddard Space Flight Ctr. (United States); F. Aharonian, Dublin Institute for Advanced Studies (Ireland); F. Akimoto, Nagoya Univ. (Japan); S. Allen, Kavli Institute for Particle Astrophysics and Cosmology, Stanford Univ. (United States); N. Anabuki, Osaka Univ. (Japan); L. Angelini, NASA Goddard Space Flight Ctr. (United States); K. Arnaud, Univ. of Maryland (United States); H. Awaki, Ehime Univ. (Japan); A. Bamba, Dublin Institute for Advanced Studies (Ireland); N. Bando, 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); M. Chernyakova, Dublin Institute for Advanced Studies (Ireland); P. Coppi, Yale Univ. (United States); E. Costantini, SRON Netherlands Institute for Space Research (Netherlands); J. Cottam, J. Crow, NASA Goddard Space Flight Ctr. (United States); J. de Plaa, C de Vries, 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, K. Ebisawa, Japan Aerospace Exploration Agency (Japan); T. Enoto, Kavli Institute for Particle Astrophysics and Cosmology, Stanford Univ. (United States); Y. Ezoe, Tokyo Metropolitan Univ. (Japan); A. Fabian, Univ. of Cambridge (United Kingdom); 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); P. Gandhi, 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); Y. Haba, Nagoya Univ. (Japan); K. Hamaguchi, Univ. of Maryland (United States); I. Hatsukade, Univ. of Miyazaki (Japan); K. Hayashida, Osaka Univ. (Japan); J. Hiraga, The Univ. of Tokyo (Japan); K. Hirose, Japan Aerospace Exploration Agency (Japan); A. Hornschemeier, NASA Goddard Space Flight Ctr. (United States); J. Hughes, Rutgers, The State Univ. of New Jersey (United States); U. Hwang, The Johns Hopkins Univ. (United States); R. Iizuka, Chuo Univ. (Japan); K. Ishibashi, Nagoya Univ. (Japan); M. Ishida, K. Ishimura, Japan Aerospace Exploration Agency (Japan); Y. Ishisaki, Tokyo Metropolitan Univ. (Japan); N. Isobe, Kyoto Univ. (Japan); M. Ito, Kobe Univ. (Japan); N. Iwata, Japan Aerospace Exploration Agency (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); H. Katagiri, Hiroshima Univ. (Japan); J. Kataoka, Waseda Univ. (Japan); S. Katsuda, NASA Goddard Space Flight Ctr. (United States); M. Kawaharada, Japan Aerospace Exploration Agency (Japan); N. Kawai, Tokyo Institute of Technology (Japan); S. Kawasaki, D. Khantaluyan, Japan Aerospace Exploration Agency (Japan); C. Kilbourne, NASA Goddard Space Flight Ctr. (United States); K. Kinugasa, Gunma Astronomical Observatory (Japan); S. Kitamoto, Rikkyo Univ. (Japan); T. Kitayama, Toho Univ. (Japan); T. Kohmura, Kogakuin Univ. (Japan); M. Kokubun, Japan Aerospace Exploration Agency (Japan); T. Kosaka, Kochi Univ. of Technology (Japan); T. Kotani, Aoyama Gakuin Univ. (Japan); K. Koyama, Kyoto Univ. (Japan); A. Kubota, Shibaura Institute of Technology (Japan); H. Kunieda, Nagoya Univ. (Japan); P. Laurent, F. Lebrun, O. Limousin, IRFU/Service d'Astrophysique, CEA Saclay (France); M. Loewenstein, NASA Goddard Space Flight Ctr. (United States); K. Long, Space Telescope Science Institute (United States); G. Madejski, Kavli

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 D. McCammon, Univ. of Wisconsin-Madison (United States); J. Miller, Univ. of Michigan (United States); S. Mineshige, Kyoto Univ. (Japan); K. Minesugi, Japan Aerospace Exploration Agency (Japan); T. Miyazawa, Nagoya Univ. (Japan); T. Mizuno, Hiroshima Univ. (Japan);
 K. Mori, Univ. of Miyazaki (Japan); H. Mori, Japan Aerospace Exploration Agency (Japan);
 K. Mukai, NASA Goddard Space Flight Ctr. (United States); H. Murakami, Rikkyo Univ. (Japan); T. Murakami, Kanazawa Univ. (Japan); R. Mushotzky, Univ. of Maryland (United States); Y. Nakagawa, RIKEN (Japan); T. Nakagawa, Japan Aerospace Exploration Agency (Japan); H. Nakajima, Osaka Univ. (Japan); T. Nakamori, Waseda Univ. (Japan);
 K. Nakazawa, The Univ. of Tokyo (Japan); Y. Namba, Chubu Univ. (Japan); M. Nomachi, Osaka Univ. (Japan); S. O'Dell, NASA Marshall Space Flight Ctr. (United States); H. Ogawa, M. Ogawa, Japan Aerospace Exploration Agency (Japan); K. Ogi, Ehime Univ. (Japan);
 T. Ohashi, Tokyo Metropolitan Univ. (Japan); M. Ohno, M. Ohta, Japan Aerospace Exploration Agency (Japan); T. Okajima, The Johns Hopkins Univ. (United States); N. Ota, Tokyo Univ. of Science (Japan); M. Ozaki, Japan Aerospace Exploration Agency (Japan);
 F. Paerels, Columbia Univ. (United States); S. Paltani, Univ. of Geneva (Switzerland);
 A. Parmar, European Space Research and Technology Ctr. (Netherlands); R. Petre, NASA Goddard Space Flight Ctr. (United States); M. Pohl, Univ. of Geneva (Switzerland); S. Porter, NASA Goddard Space Flight Ctr. (United States); B. Ramsey, NASA Marshall Space Flight Ctr. (United States); C. Reynolds, Univ. of Maryland, College Park (United States); S. Sakai, Japan Aerospace Exploration Agency (Japan); R. Sambruna, NASA Goddard Space Flight Ctr. (United States); G. Sato, Y. Sato, Japan Aerospace Exploration Agency (Japan);
 P. Serlemitsos, NASA Goddard Space Flight Ctr. (United States); M. Shida, T. Shimada, K. Shinozaki, Japan Aerospace Exploration Agency (Japan); P. Shirron, 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, H. Sugita, Japan Aerospace Exploration Agency (Japan); A. Szymkowiak, Yale Univ. (United States); H. Tajima, Kavli Institute for Particle Astrophysics and Cosmology, Stanford Univ. (United States); H. Takahashi, Hiroshima Univ. (Japan); Y. Takei, Japan Aerospace Exploration Agency (Japan); T. Tamagawa, RIKEN (Japan); T. Tamura, K. Tamura, Japan Aerospace Exploration Agency (Japan); T. Tanaka, Kavli Institute for Particle Astrophysics and Cosmology, Stanford Univ. (United States); Y. Tanaka, Y. Tanaka, 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, Japan Aerospace Exploration Agency (Japan); M. Tozuka, Tokyo Univ. of Science (Japan); Y. Tsuboi, Chuo Univ. (Japan); M. Tsujimoto, Japan Aerospace Exploration Agency (Japan); H. Tsunemi, Osaka Univ. (Japan); T. Tsuru, Kyoto Univ. (Japan); H. Uchida, Osaka 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. Uno, Nihon Fukushi Univ. (Japan); M. Urry, Yale Univ. (United States); S. Watanabe, Japan Aerospace Exploration Agency (Japan); N. White, NASA Goddard Space Flight Ctr. (United States);
 T. Yamada, Japan Aerospace Exploration Agency (Japan); H. Yamaguchi, RIKEN (Japan); K. Yamaoka, Aoyama Gakuin Univ. (Japan); N. Yamasaki, Japan Aerospace Exploration Agency (Japan); M. Yamauchi, Univ. of Miyazaki (Japan); S. Yamauchi, Nara Women's Univ. (Japan); Y. Yatsu, Tokyo Institute of Technology (Japan); D. Yonetoku, Kanazawa Univ. (Japan); A. Yoshida, Aoyama Gakuin Univ. (Japan)

- 7732 10 **Soft x-ray imager (SXI) onboard ASTRO-H [7732-35]**
H. Tsunemi, K. Hayashida, Osaka Univ. (Japan); T. G. Tsuru, Kyoto Univ. (Japan); T. Dotani, Japan Aerospace Exploration Agency (Japan); J. S. Hiraga, The Univ. of Tokyo (Japan); N. Anabuki, Osaka Univ. (Japan); A. Bamba, Japan Aerospace Exploration Agency (Japan); I. Hatsukade, Univ. of Miyazaki (Japan); T. Kohmura, Kogakuin Univ. (Japan); K. Mori, Univ. of Miyazaki (Japan); H. Murakami, Rikkyo Univ. (Japan); H. Nakajima, Osaka Univ. (Japan); M. Ozaki, Japan Aerospace Exploration Agency (Japan); H. Uchida, Osaka Univ. (Japan); M. Yamauchi, Univ. of Miyazaki (Japan)

SESSION 9 MEDIUM X-RAY OBSERVATORIES III

- 7732 11 **The high-resolution x-ray microcalorimeter spectrometer system for the SXS on ASTRO-H [7732-36]**
K. Mitsuda, Japan Aerospace Exploration Agency (Japan); R. L. Kelley, K. R. Boyce, NASA Goddard Space Flight Ctr. (United States); G. V. Brown, Lawrence Livermore National Lab. (United States); E. Costantini, SRON Netherlands Institute for Space Research (Netherlands); M. J. DiPirro, NASA Goddard Space Flight Ctr. (United States); Y. Ezoe, Tokyo Metropolitan Univ. (Japan); R. Fujimoto, Kanazawa Univ. (Japan); K. C. Gendreau, NASA Goddard Space Flight Ctr. (United States); J.-W. den Herder, SRON Netherlands Institute for Space Research (Netherlands); A. Hoshino, Kanazawa Univ. (Japan); Y. Ishisaki, Tokyo Metropolitan Univ. (Japan); C. A. Kilbourne, NASA Goddard Space Flight Ctr. (United States); S. Kitamoto, Rikkyo Univ. (Japan); D. McCammon, Univ. of Wisconsin-Madison (United States); M. Murakami, Univ. of Tsukuba (Japan); H. Murakami, Rikkyo Univ. (Japan); M. Ogawa, Japan Aerospace Exploration Agency (Japan); T. Ohashi, Tokyo Metropolitan Univ. (Japan); A. Okamoto, Japan Aerospace Exploration Agency (Japan); S. Paltani, M. Pohl, Univ. of Geneva (Switzerland); F. S. Porter, NASA Goddard Space Flight Ctr. (United States); Y. Sato, K. Shinozaki, Japan Aerospace Exploration Agency (Japan); P. J. Shirron, G. A. Sneiderman, NASA Goddard Space Flight Ctr. (United States); H. Sugita, Japan Aerospace Exploration Agency (Japan); A. Szymkowiak, Yale Univ. (United States); Y. Takei, Japan Aerospace Exploration Agency (Japan); T. Tamagawa, RIKEN (Japan); M. Tashiro, Y. Terada, Saitama Univ. (Japan); M. Tsujimoto, Japan Aerospace Exploration Agency (Japan); C. de Vries, SRON Netherlands Institute for Space Research (Netherlands); H. Yamaguchi, RIKEN (Japan); N. Y. Yamasaki, Japan Aerospace Exploration Agency (Japan)
- 7732 12 **Design of a 3-stage ADR for the soft x-ray spectrometer instrument on the ASTRO-H mission [7732-37]**
P. J. Shirron, M. O. Kimball, D. C. Wegel, E. R. Canavan, M. J. DiPirro, NASA Goddard Space Flight Ctr. (United States)
- 7732 13 **Filters and calibration sources for the soft x-ray spectrometer (SXS) instrument on ASTRO-H [7732-38]**
C. P. de Vries, J. W. den Herder, E. Costantini, H. Aarts, P. Lowes, J. S. Kaastra, SRON Netherlands Institute for Space Research (Netherlands); R. Kelley, K. Gendreau, Z. Arzoumanian, R. Koenecke, NASA Goddard Space Flight Ctr. (United States); D. Haas, S. Paltani, ISDC Data Ctr. for Astrophysics (Switzerland); K. Mitsuda, N. Y. Yamasaki, Japan Aerospace Exploration Agency (Japan)
- 7732 14 **Hard x-ray telescope to be onboard ASTRO-H [7732-39]**
H. Kunieda, Nagoya Univ. (Japan); H. Awaki, Ehime Univ. (Japan); A. Furuzawa, Y. Haba, Nagoya Univ. (Japan); R. Iizuka, Chuo Univ. (Japan); K. Ishibashi, Nagoya Univ. (Japan); M. Ishida, Japan Aerospace Exploration Agency (Japan); M. Itoh, Kobe Univ. (Japan);

T. Kosaka, Kochi Univ. of Technology (Japan); Y. Maeda, Japan Aerospace Exploration Agency (Japan); H. Matsumoto, T. Miyazawa, H. Mori, Nagoya Univ. (Japan); Y. Namba, Chubu Univ. (Japan); Y. Ogasaka, Nagoya Univ. (Japan); K. Ogi, Ehime Univ. (Japan); T. Okajima, NASA Goddard Space Flight Ctr. (United States) and The Johns Hopkins Univ. (United States); Y. Suzuki, JASRI/SPRing-8 (Japan); K. Tamura, Japan Aerospace Exploration Agency (Japan); Y. Tawara, Nagoya Univ. (Japan); K. Uesugi, JASRI/SPRing-8 (Japan); K. Yamashita, Nagoya Univ. (Japan); S. Yamauchi, Nara Women's Univ. (Japan)

7732 15 **Hard x-ray imager (HXI) for the ASTRO-H Mission [7732-40]**

M. Kokubun, Japan Aerospace Exploration Agency (Japan); K. Nakazawa, The Univ. of Tokyo (Japan); T. Enoto, Kavli Institute for Particle Astrophysics and Cosmology, Stanford Univ. (United States); Y. Fukazawa, Hiroshima Univ. (Japan); K. Gilmore, Kavli Institute for Particle Astrophysics and Cosmology, Stanford Univ. (United States); J. Kataoka, Waseda Univ. (Japan); M. Kawaharada, Japan Aerospace Exploration Agency (Japan); P. Laurent, F. Lebrun, O. Limousin, IRFU, Service d'Astrophysique, CEA Saclay (France); K. Makishima, The Univ. of Tokyo (Japan); T. Mizuno, Hiroshima Univ. (Japan); K. Mori, Japan Aerospace Exploration Agency (Japan); T. Nakamori, Waseda Univ. (Japan); M. Ohno, M. Ohta, G. Sato, Japan Aerospace Exploration Agency (Japan); H. Tajima, Kavli Institute for Particle Astrophysics and Cosmology, Stanford Univ. (United States); H. Takahashi, Hiroshima Univ. (Japan); T. Takahashi, Japan Aerospace Exploration Agency (Japan); T. Tanaka, Kavli Institute for Particle Astrophysics and Cosmology, Stanford Univ. (United States); 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. Watanabe, Japan Aerospace Exploration Agency (Japan); Y. Yatsu, Tokyo Institute of Technology (Japan); K. Yamaoka, Aoyama Gakuin Univ. (Japan)

7732 16 **Soft gamma-ray detector for the ASTRO-H Mission [7732-41]**

H. Tajima, R. Blandford, T. Enoto, Kavli Institute for Particle Astrophysics and Cosmology, Stanford Univ. (United States); Y. Fukazawa, Hiroshima Univ. (Japan); K. Gilmore, T. Kamae, Kavli Institute for Particle Astrophysics and Cosmology, Stanford Univ. (United States); 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, IRFU, Service d'Astrophysique, CEA (France); G. Madejski, Kavli Institute for Particle Astrophysics and Cosmology, Stanford Univ. (United States); K. Makishima, The Univ. of Tokyo (Japan); T. Mizuno, Hiroshima Univ. (Japan); K. Nakazawa, The Univ. of Tokyo (Japan); M. Ohno, M. Ohta, G. Sato, R. Sato, 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, Kavli Institute for Particle Astrophysics and Cosmology, Stanford Univ. (United States); M. Tashiro, Y. Terada, Saitama Univ. (Japan); Y. Uchiyama, Kavli Institute for Particle Astrophysics and Cosmology, Stanford Univ. (United States); S. Watanabe, Institute of Space and Astronautical Science, Japan Aerospace Exploration Agency (Japan) and The Univ. of Tokyo (Japan); K. Yamaoka, Aoyama Gakuin Univ. (Japan); D. Yonetoku, Kanazawa Univ. (Japan)

SESSION 10 MEDIUM X-RAY OBSERVATORIES IV

7732 17 **NHXM: a New Hard X-ray Imaging and Polarimetric Mission [7732-42]**

G. Tagliaferri, Osservatorio Astronomico di Brera (Italy); A. Argan, Istituto Nazionale di Astrofisica (Italy); R. Bellazzini, Istituto Nazionale di Fisica Nucleare (Italy); J. Bookbinder,

Harvard-Smithsonian Ctr. for Astrophysics (United States); O. Catalano, INAF - IASF Palermo (Italy); E. Cavazzuti, Agenzia Spaziale Italiana (Italy); E. Costa, INAF - IASF Roma (Italy); G. Cusumano, INAF - IASF Palermo (Italy); F. Fiore, Osservatorio Astronomico di Roma (Italy); C. Fiorini, Politecnico di Milano (Italy); P. Giommi, Agenzia Spaziale Italiana (Italy); G. Malaguti, INAF - IASF Bologna (Italy); G. Matt, Univ. degli Studi di Roma Tre (Italy); S. Mereghetti, INAF - IASF Milano (Italy); G. Micela, Osservatorio Astronomico di Palermo (Italy); S. Murray, Harvard-Smithsonian Ctr. for Astrophysics (United States); B. Negri, Agenzia Spaziale Italiana (Italy); G. Pareschi, Osservatorio Astronomico di Brera (Italy); G. Perola, Univ. degli Studi di Roma Tre (Italy); S. Romaine, Harvard-Smithsonian Ctr. for Astrophysics (United States); G. Villa, INAF - IASF Milano (Italy)

- 7732 18 **The optics system of the New Hard X-ray Mission: design and development** [7732-43]
S. Basso, G. Pareschi, O. Citterio, D. Spiga, G. Tagliaferri, M. Civitani, L. Raimondi, G. Sironi, V. Cotroneo, Osservatorio Astronomico di Brera (Italy); B. Negri, Agenzia Spaziale Italiana (Italy); G. Parodi, F. Martelli, BCV Progetti S.r.l. (Italy); G. Borghi, A. Orlandi, D. Vernani, G. Valsecchi, R. Binda, Media Lario Technologies (Italy); S. Romaine, P. Gorenstein, P. Attinà, Harvard-Smithsonian Ctr. for Astrophysics (United States)

- 7732 19 **The NHXM spectral-imaging cameras** [7732-44]
O. Catalano, INAF - IASF Palermo (Italy); A. Argan, Istituto Nazionale di Astrofisica (Italy); R. Bellazzini, A. Brez, Istituto Nazionale di Fisica Nucleare (Italy); E. Costa, INAF - IASF Roma (Italy); C. Fiorini, Politecnico di Milano (Italy); G. Malaguti, INAF - IASF Bologna (Italy); G. Pareschi, G. Tagliaferri, Osservatorio Astronomico di Brera (Italy); M. Uslenghi, INAF - IASF Milano (Italy)

- 7732 1A **A set of x-ray polarimeters for the New Hard X-ray Imaging and Polarimetric Mission** [7732-45]
P. Soffitta, E. Costa, F. Muleri, R. Campana, E. Del Monte, S. Di Cosimo, Y. Evangelista, S. Fabiani, M. Feroci, F. Lazzarotto, A. Rubini, INAF - IASF Roma (Italy); R. Bellazzini, A. Brez, M. Minuti, N. Omodei, M. Pinchera, M. Razzano, C. Sgrò, G. Spandre, Istituto Nazionale di Fisica Nucleare (Italy); A. Argan, Istituto Nazionale di Astrofisica (Italy); G. Matt, Univ. degli Studi di Roma Tre (Italy)

SESSION 11 LARGE X-RAY OBSERVATORIES I

- 7732 1B **An overview of the IXO Observatory (Invited Paper)** [7732-46]
J. Bookbinder, Harvard-Smithsonian Ctr. for Astrophysics (United States)
- 7732 1C **ESA assessment study activities on the International X-ray Observatory** [7732-47]
N. Rando, D. Martin, D. Lumb, P. Verhoeve, T. Oosterbroek, L. Puig, G. Saavedra, M. Linder, L. Scolamiero, T. Voirin, C. Damasio, D. de Wilde, European Space Research and Technology Ctr. (Netherlands); M. Landgraf, European Space Operations Ctr. (Germany); P. Gondoin, European Space Research and Technology Ctr. (Netherlands); M. Bavdaz, European Space Operations Ctr. (Germany)
- 7732 1D **Payload study activities on the International X-ray Observatory** [7732-48]
D. Martin, N. Rando, D. Lumb, P. Verhoeve, T. Oosterbroek, L. Puig, G. Saavedra, M. Bavdaz, P. Gondoin, European Space Research and Technology Ctr. (Netherlands)

- 7732 1E **ESA optics technology preparation for IXO [7732-49]**
M. Bavdaz, E. Wille, K. Wallace, B. Guldemann, D. Lumb, D. Martin, N. Rando, European Space Research and Technology Ctr. (Netherlands)
- 7732 1F **Silicon pore x-ray optics for IXO [7732-50]**
M. J. Collon, R. Günther, M. Ackermann, R. Partapsing, cosine Research B.V. (Netherlands); G. Vacanti, cosine Science and Computing B.V. (Netherlands); M. W. Beijersbergen, cosine Research B.V. (Netherlands); M. Bavdaz, E. Wille, K. Wallace, European Space Research and Technology Ctr. (Netherlands); M. Olde Riekerink, B. Lansdorp, L. de Vrede, Micronit Microfluidics B.V. (Netherlands); C. van Baren, SRON Netherlands Institute for Space Research (Netherlands); P. Müller, M. Krumrey, Physikalisch-Technische Bundesanstalt (Germany); M. Freyberg, Max-Planck-Institut für extraterrestrische Physik (Germany)

SESSION 12 LARGE X-RAY OBSERVATORIES II

- 7732 1G **Mirror technology development for the International X-ray Observatory mission (IXO) [7732-51]**
W. W. Zhang, M. Atanassova, NASA Goddard Space Flight Ctr. (United States); M. Biskach, NASA Goddard Space Flight Ctr. (United States) and Stinger Ghaffarian Technologies, Inc. (United States); P. N. Blake, NASA Goddard Space Flight Ctr. (United States); G. Byron, NASA Goddard Space Flight Ctr. (United States) and Stinger Ghaffarian Technologies, Inc. (United States); K. W. Chan, NASA Goddard Space Flight Ctr. (United States) and Univ. of Maryland, Baltimore County (United States); T. Evans, NASA Goddard Space Flight Ctr. (United States) and Stinger Ghaffarian Technologies, Inc. (United States); C. Fleetwood, NASA Goddard Space Flight Ctr. (United States) and Ball Aerospace & Technologies Corp. (United States); M. Hill, NASA Goddard Space Flight Ctr. (United States); M. Hong, NASA Goddard Space Flight Ctr. (United States) and Stinger Ghaffarian Technologies, Inc. (United States); L. Jalota, NASA Goddard Space Flight Ctr. (United States) and Univ. of Maryland, Baltimore County (United States); L. Kolos, NASA Goddard Space Flight Ctr. (United States); J. M. Mazzarella, R. McClelland, L. Olsen, NASA Goddard Space Flight Ctr. (United States) and Stinger Ghaffarian Technologies, Inc. (United States); R. Petre, D. Robinson, T. T. Saha, NASA Goddard Space Flight Ctr. (United States); M. Sharpe, NASA Goddard Space Flight Ctr. (United States) and Stinger Ghaffarian Technologies, Inc. (United States); M. V. Gubarev, W. D. Jones, T. Kester, S. L. O'Dell, NASA Marshall Space Flight Ctr. (United States); D. Caldwell, W. Davis, M. Freeman, W. Podgorski, P. B. Reid, S. Romaine, Smithsonian Astrophysical Observatory (United States)
- 7732 1H **The x-ray microcalorimeter spectrometer onboard of IXO [7732-52]**
J. W. den Herder, SRON Netherlands Institute for Space Research (Netherlands); R. L. Kelley, NASA Goddard Space Flight Ctr. (United States); K. Mitsuda, Institute of Space and Astronautical Science (Japan); L. Piro, INAF - IASF Roma (Italy); S. R. Bandler, NASA Goddard Space Flight Ctr. (United States); P. Bastia, Thales Alenia Space Italia S.p.A. (Italy); K. R. Boyce, NASA Goddard Space Flight Ctr. (United States); M. Bruin, SRON Netherlands Institute for Space Research (Netherlands); J. A. Chervenak, NASA Goddard Space Flight Ctr. (United States); L. Colasanti, INAF - IASF Roma (Italy); W. B. Doriese, National Institute of Standards and Technology (United States); M. DiPirro, M. E. Eckart, NASA Goddard Space Flight Ctr. (United States); Y. Ezoe, Tokyo Metropolitan Univ. (Japan); E. Figueroa-Feliciano, Kavli Institute for Astrophysics and Space Research, Massachusetts Institute of Technology (United States); L. Ferrari, NASA Goddard Space Flight Ctr. (Italy); R. Fujimoto, Kanazawa Univ. (Japan); F. Gatti, Istituto Nazionale di Fisica Nucleare, Univ. degli Studi di Genova (Italy); K. C. Gendreau, NASA Goddard Space Flight Ctr. (United States); L. Gottardi,

R. den Hartog, SRON Netherlands Institute for Space Research (Netherlands); G. C. Hilton, NASA Goddard Space Flight Ctr. (United States); H. Hoevers, SRON Netherlands Institute for Space Research (Netherlands); K. D. Irwin, National Institute of Standards and Technology (United States); Y. Ishisaki, Tokyo Metropolitan Univ. (Japan); A. Kashani, NASA Ames Research Ctr. (United States); C. A. Kilbourne, NASA Goddard Space Flight Ctr. (United States); P. de Korte, J. van der Kuur, SRON Netherlands Institute for Space Research (Netherlands); C. Macculi, INAF - IASF Roma (Italy); T. Mineo, INAF - IASF Palermo (Italy); J. H. Nieland, SRON Netherlands Institute for Space Research (Netherlands); T. Ohashi, Tokyo Metropolitan Univ. (Japan); S. Paltani, Univ. of Geneva (Switzerland); E. Perinati, INAF - IASF Palermo (Italy); F. S. Porter, P. J. Shirron, S. J. Smith, NASA Goddard Space Flight Ctr. (United States); Y. Takei, Institute of Space and Astronautical Science (Japan); M. Tashiro, Saitama Univ. (Japan); G. Torrioli, Istituto di Fotonica e Nanotecnologie (Italy); M. Tsujimoto, Institute of Space and Astronautical Science (Japan); H. van Weers, SRON Netherlands Institute for Space Research (Netherlands); N. Y. Yamasaki, Institute of Space and Astronautical Science (Japan)

7732 1I **The wide-field imager for IXO: status and future activities** [7732-53]

L. Strüder, F. Aschauer, Max-Planck-Institut für extraterrestrische Physik (Germany) and Max-Planck-Institut Halbleiterlabor (Germany); M. Bautz, Kavli Institute for Astrophysics and Space Research, Massachusetts Institute of Technology (United States); L. Bombelli, Politecnico di Milano (Italy); D. Burrows, The Pennsylvania State Univ. (United States); C. Fiorini, Politecnico di Milano (Italy); G. Fraser, Univ. of Leicester (United Kingdom); S. Herrmann, Max-Planck-Institut für extraterrestrische Physik (Germany) and Max-Planck-Institut Halbleiterlabor (Germany); E. Kendziorra, Eberhard Karls Univ. Tübingen (Germany); M. Kuster, XFEL GmbH (Germany); T. Lauf, Max-Planck-Institut für extraterrestrische Physik (Germany) and Max-Planck-Institut Halbleiterlabor (Germany); P. Lechner, G. Lutz, P. Majewski, PNSensor GmbH (Germany); A. Meuris, M. Porro, J. Reiffers, Max-Planck-Institut für extraterrestrische Physik (Germany) and Max-Planck-Institut Halbleiterlabor (Germany); R. Richter, Max-Planck-Institut Halbleiterlabor (Germany) and Max-Planck-Institut für Physik (Germany); A. Santangelo, Eberhard Karls Univ. Tübingen (Germany); H. Soltau, PNSensor GmbH (Germany); A. Stefanescu, Max-Planck-Institut Halbleiterlabor (Germany) and Johannes Gutenberg Univ. Mainz (Germany); C. Tenzer, Eberhard Karls Univ. Tübingen (Germany); J. Treis, Max-Planck-Institut Halbleiterlabor (Germany) and Max-Planck-Institut für Sonnensystemforschung (Germany); H. Tsunemi, Osaka Univ. (Japan); G. de Vita, Max-Planck-Institut für extraterrestrische Physik (Germany) and Max-Planck-Institut Halbleiterlabor (Germany); J. Wilms, Erlangen Ctr. for Astroparticle Physics (Germany)

7732 1J **Critical-angle transmission grating spectrometer for high-resolution soft x-ray spectroscopy on the International X-ray Observatory** [7732-54]

R. K. Heilmann, J. E. Davis, D. Dewey, M. W. Bautz, R. Foster, A. Brucoleri, P. Mukherjee, Kavli Institute for Astrophysics and Space Research, Massachusetts Institute of Technology (United States); D. Robinson, NASA Goddard Space Flight Ctr. (United States); D. P. Huenemoerder, H. L. Marshall, M. L. Schattenburg, N. S. Schulz, Kavli Institute for Astrophysics and Space Research, Massachusetts Institute of Technology (United States); L. J. Guo, A. F. Kaplan, Univ. of Michigan (United States); R. B. Schweikart, Ball Aerospace & Technologies Corp. (United States)

7732 1K **Developments of the off-plane x-ray grating spectrometer for IXO** [7732-55]

R. L. McEntaffer, The Univ. of Iowa (United States); N. J. Murray, A. D. Holland, J. Tutt, S. J. Barber, R. Harriss, The Open Univ. (United Kingdom); T. Schultz, The Univ. of Iowa (United States)

States); S. Casement, C. Lillie, D. Dailey, T. Johnson, R. Danner, Northrop Grumman Aerospace Systems (United States); W. Cash, B. Zeiger, A. Shipley, Univ. of Colorado at Boulder (United States); M. Page, D. Walton, Univ. College London (United Kingdom); P. Pool, J. Endicott, e2v technologies plc (United Kingdom); D. Willingale, Univ. of Leicester (United Kingdom)

7732 1L **The hard x-ray imager onboard IXO** [7732-56]
K. Nakazawa, The Univ. of Tokyo (Japan); T. Takahashi, The Univ. of Tokyo (Japan) and Japan Aerospace Exploration Agency (Japan); O. Limousin, IRFU, Service d'Astrophysique, CEA Saclay (France); M. Kokubun, S. Watanabe, Japan Aerospace Exploration Agency (Japan); P. Laurent, M. Arnaud, IRFU, Service d'Astrophysique, CEA Saclay (France); H. Tajima, Stanford Univ. (United States)

7732 1M **The High Time Resolution Spectrometer (HTRS) aboard the International X-ray Observatory (IXO)** [7732-57]
D. Barret, L. Ravera, Ctr. d'Etude Spatiale des Rayonnements (France); P. Bodin, Ctr. National d'Etudes Spatiales (France); C. Amoros, M. Boutelier, J.-M. Glorian, O. Godet, G. Orttner, K. Lacombe, R. Pons, D. Rambaud, P. Ramon, S. Ramchoun, Ctr. d'Etude Spatiale des Rayonnements (France); J.-M. Biffi, M. Belasic, R. Clédassou, D. Faye, B. Pouilloux, Ctr. National d'Etudes Spatiales (France); C. Motch, L. Michel, Observatoire Astronomique de Strasbourg (France); P. H. Lechner, A. Niculae, PNSensor GmbH (Germany); L. W. Strueder, Max-Planck-Institut für extraterrestrische Physik (Germany); G. Distratis, E. Kendziorra, A. Santangelo, C. Tenzer, H. Wende, Institut für Astronomie und Astrophysik (Germany); J. Wilms, I. Kreykenbohm, C. Schmid, Dr. Remeis-Observatory (Germany); S. Paltani, F. Cadoux, ISDC, Geneva Observatory (Switzerland); C. Fiorini, L. Bombelli, Politecnico di Milano (Italy); M. Méndez, Kapteyn Astronomical Institute (Netherlands); S. Mereghetti, INAF - IASF Milano (Italy)

SESSION 13 LOW-TEMPERATURE DETECTORS

7732 1O **MIS μ -calorimeters arrays: an alternative to IXO/XMS TES/Squids baseline** [7732-59]
A. Aliane, Commissariat à l'Energie Atomique (France); J. L. Sauvageot, DSM/IRFU/Service d'Astrophysique, CEA (France); X. de la Broïse, DSM/IRFU/SEDI, CEA (France); C. Pigot, J. Martignac, DSM/IRFU/Service d'Astrophysique, CEA (France); E. Grémion, DSM/IRFU/SEDI, CEA (France); V. Szeflinski, DSM/IRFU/Service d'Astrophysique, CEA (France); J. Goupy, P. Agnese, Commissariat à l'Énergie Atomique (France)

7732 1P **Progress on the Micro-X sounding rocket x-ray telescope: completion of flight hardware** [7732-60]
P. Wikus, Massachusetts Institute of Technology (United States); J. S. Adams, R. Baker, S. R. Bandler, NASA Goddard Space Flight Ctr. (United States); W. Brys, D. Dewey, Massachusetts Institute of Technology (United States); W. B. Doriese, National Institute of Standards and Technology (United States); M. E. Eckart, NASA Goddard Space Flight Ctr. (United States); E. Figueroa-Feliciano, R. Goeke, Massachusetts Institute of Technology (United States); R. Hamersma, Univ. of Florida (United States); G. C. Hilton, National Institute of Standards and Technology (United States); U. Hwang, NASA Goddard Space Flight Ctr. (United States); K. D. Irwin, National Institute of Standards and Technology (United States); R. L. Kelley, C. A. Kilbourne, NASA Goddard Space Flight Ctr. (United States); S. W. Leman, Massachusetts Institute of Technology (United States); D. McCammon, Univ. of Wisconsin-Madison (United States); T. Okajima, NASA Goddard Space Flight Ctr. (United States); R. H. O'Neal, Jr., Massachusetts Institute of Technology (United States); F. S. Porter,

NASA Goddard Space Flight Ctr. (United States); C. D. Reintsema, National Institute of Standards and Technology (United States); J. M. Rutherford, Massachusetts Institute of Technology (United States); P. Serlemitsos, NASA Goddard Space Flight Ctr. (United States); T. Saab, Univ. of Florida (United States); K. Sato, Massachusetts Institute of Technology (United States); Y. Soong, NASA Goddard Space Flight Ctr. (United States); S. N. Trowbridge, Massachusetts Institute of Technology (United States)

SESSION 14 NEW X-RAY/GAMMA-RAY MISSIONS I

- 7732 1R **Results from the Extended X-ray Off-plane Spectrometer (EXOS) sounding rocket payload** [7732-62]
P. Oakley, B. Zeiger, M. Kaiser, A. Shipley, W. Cash, Ctr. for Astrophysics and Space Astronomy, Univ. of Colorado at Boulder (United States); R. McEntaffer, T. Schultz, The Univ. of Iowa (United States)
- 7732 1S **DIOS: the diffuse intergalactic oxygen surveyor: status and prospects** [7732-63]
T. Ohashi, Y. Ishisaki, Y. Ezoe, S. Sasaki, H. Kawahara, Tokyo Metropolitan Univ. (Japan); K. Mitsuda, N. Y. Yamasaki, Y. Takei, M. Ishida, Japan Aerospace Exploration Agency (Japan); Y. Tawara, I. Sakurai, A. Furuzawa, Nagoya Univ. (Japan); Y. Suto, The Univ. of Tokyo (Japan); K. Yoshikawa, Univ. of Tsukuba (Japan); N. Kawai, Tokyo Institute of Technology (Japan); R. Fujimoto, Kanazawa Univ. (Japan); T. G. Tsuru, Kyoto Univ. (Japan); K. Matsushita, Tokyo Univ. of Science (Japan); T. Kitayama, Toho Univ. (Japan)
- 7732 1T **Xenia: cosmo-chemical evolution of the Universe** [7732-64]
D. N. Burrows, The Pennsylvania State Univ. (United States); D. Hartmann, Clemson Univ. (United States); C. Kouveliotou, NASA Marshall Space Flight Ctr. (United States); L. Piro, INAF - IASF Roma (Italy); J.-W. den Herder, SRON Netherlands Institute for Space Research (Netherlands); T. Ohashi, Tokyo Metropolitan Univ. (Japan)
- 7732 1U **JANUS: exploring the high redshift universe** [7732-65]
D. N. Burrows, The Pennsylvania State Univ. (United States); P. W. A. Roming, Southwest Research Institute (United States); D. B. Fox, The Pennsylvania State Univ. (United States); T. L. Herter, Cornell Univ. (United States); A. Falcone, S. Bilén, J. A. Nousek, J. A. Kennea, The Pennsylvania State Univ. (United States)
- 7732 1V **LOFT: a large observatory for x-ray timing** [7732-66]
M. Feroci, INAF - IASF Roma (Italy) and Istituto Nazionale di Fisica Nucleare (Italy); L. Stella, Osservatorio Astronomico di Roma (Italy); A. Vacchi, Istituto Nazionale di Fisica Nucleare (Italy); C. Labanti, INAF - IASF Bologna (Italy); M. Rapisarda, ENEA Frascati (Italy), INAF - IASF Roma (Italy), and Istituto Nazionale di Fisica Nucleare (Italy); P. Attinà, Thales Alenia Space Italia S.p.A. (Italy); T. Belloni, Osservatorio Astronomico di Brera (Italy); R. Campana, INAF - IASF Roma (Italy) and Istituto Nazionale di Fisica Nucleare (Italy); S. Campana, Osservatorio Astronomico di Brera (Italy); E. Costa, INAF - IASF Roma (Italy); E. Del Monte, INAF - IASF Roma (Italy) and Istituto Nazionale di Fisica Nucleare (Italy); I. Donnarumma, INAF - IASF Roma (Italy); Y. Evangelista, INAF - IASF Roma (Italy) and Istituto Nazionale di Fisica Nucleare (Italy); G. L. Israel, Osservatorio Astronomico di Roma (Italy); F. Muleri, INAF - IASF Roma (Italy); P. Porta, Thales Alenia Space Italia S.p.A. (Italy); A. Rashevsky, G. Zampa, N. Zampa, Istituto Nazionale di Fisica Nucleare (Italy); G. Baldazzi, Univ. degli Studi di Bologna (Italy); G. Bertuccio, Politecnico di Milano (Italy); V. Bonvicini, Istituto Nazionale di Fisica Nucleare (Italy); E. Bozzo, ISDC (Switzerland); L. Burderi, Univ. degli Studi di Cagliari (Italy); A. Corongiu, Osservatorio Astronomico di Cagliari (Italy); S. Covino, Osservatorio

Astronomico di Brera (Italy); S. Dall'Osso, Osservatorio Astronomico di Roma (Italy); D. de Martino, Osservatorio Astronomico di Capodimonte (Italy); S. Di Cosimo, G. Di Persio, INAF - IASF Roma (Italy); T. Di Salvo, Univ. degli studi di Palermo (Italy); F. Fuschino, INAF - IASF Bologna (Italy); M. Grassi, Univ. degli Studi di Pavia (Italy); F. Lazzarotto, INAF - IASF Roma (Italy); P. Malcovati, Univ. degli Studi di Pavia (Italy); M. Marisaldi, INAF - IASF Bologna (Italy); M. Mastropietro, INAF - IASF Roma (Italy); S. Mereghetti, INAF - IASF Milano (Italy); E. Morelli, INAF - IASF Bologna (Italy); M. Orio, Osservatorio Astronomico di Torino (Italy); A. Pellizzoni, Osservatorio Astronomico di Cagliari (Italy); L. Pacciani, INAF - IASF Roma (Italy) and Istituto Nazionale di Fisica Nucleare (Italy); A. Papitto, Univ. degli Studi di Cagliari (Italy) and Osservatorio Astronomico di Cagliari (Italy); L. Picolli, Univ. degli Studi di Pavia (Italy); A. Possenti, Osservatorio Astronomico di Cagliari (Italy); A. Rubini, INAF - IASF Roma (Italy) and Istituto Nazionale di Fisica Nucleare (Italy); P. Soffitta, INAF, Istituto di Astrofisica Spaziale e Fisica Cosmica, Roma (Italy); R. Turolla, Univ. degli Studi di Padova (Italy); L. Zampieri, Osservatorio Astronomico di Padova (Italy)

7732 1W

Wide Field X-ray Telescope: a moderate class mission [7732-67]

S. S. Murray, Harvard-Smithsonian Ctr. for Astrophysics (United States) and The Johns Hopkins Univ. (United States); R. Giacconi, A. Ptak, The Johns Hopkins Univ. (United States); P. Rosati, European Southern Observatory (Germany); M. Weisskopf, NASA Marshall Space Flight Ctr. (United States); S. Borgani, Univ. of Trieste (Italy); C. Jones, Harvard-Smithsonian Ctr. for Astrophysics (United States); G. Pareschi, Osservatorio Astronomico di Brera (Italy); P. Tozzi, R. Gilli, Osservatorio Astronomico di Trieste (Italy); S. Campana, Osservatorio Astronomico di Brera (Italy); M. Paolillo, Univ. of Naples (Italy); G. Tagliaferri, Osservatorio Astronomico di Brera (Italy); M. Bautz, Massachusetts Institute of Technology (United States); A. Vikhlinin, Harvard-Smithsonian Ctr. for Astrophysics (United States); R. Hickox, Harvard-Smithsonian Ctr. for Astrophysics (United States) and Durham Univ. (United Kingdom); W. Forman, Harvard-Smithsonian Ctr. for Astrophysics (United States)

SESSION 15

NEW X-RAY/GAMMA-RAY MISSIONS II

7732 1X

Overview of EXIST mission science and implementation [7732-68]

J. Grindlay, Harvard-Smithsonian Ctr. for Astrophysics (United States); N. Gehrels, NASA Goddard Space Flight Ctr. (United States); J. Bloom, Univ. of California, Berkeley (United States); P. Coppi, Yale Univ. (United States); A. Soderberg, J. Hong, B. Allen, Harvard-Smithsonian Ctr. for Astrophysics (United States); S. Barthelmy, NASA Goddard Space Flight Ctr. (United States); G. Tagliaferri, Osservatorio Astronomico di Brera (Italy); H. Moseley, A. Kutyrev, NASA Goddard Space Flight Ctr. (United States); G. Fabbiano, Harvard-Smithsonian Ctr. for Astrophysics (United States); G. Fishman, B. Ramsey, NASA Marshall Space Flight Ctr. (United States); R. Della Ceca, Osservatorio Astronomico di Brera (United States); L. Natalucci, P. Ubertini III, INAF - IASF Roma (Italy)

7732 1Y

The proposed high-energy telescope (HET) for EXIST [7732-69]

J. Hong, J. Grindlay, B. Allen, Harvard-Smithsonian Ctr. for Astrophysics (United States); G. Skinner, S. Barthelmy, N. Gehrels, NASA Goddard Space Flight Ctr. (United States); A. Garson, H. Krawczynski, Washington Univ. in St. Louis (United States); W. Cook, F. Harrison, California Institute of Technology (United States); L. Natalucci, P. Ubertini, INAF - IASF Roma (Italy)

7732 1Z

Design and scientific performance of the soft x-ray imager on board EXIST [7732-70]

L. Natalucci, INAF - IASF Roma (Italy); G. Tagliaferri, Osservatorio Astronomico di Brera (Italy); A. Bazzano, INAF - IASF Roma (Italy); P. Caraveo, INAF - IASF Milano (Italy); R. Della Ceca,

Osservatorio Astronomico di Brera (Italy); J. E. Grindlay, Harvard-Smithsonian Ctr. for Astrophysics (United States); G. Pareschi, Osservatorio Astronomico di Brera (Italy); B. D. Ramsey, NASA Marshall Space Flight Ctr. (United States); P. Ubertini, INAF - IASF Roma (Italy); M. C. A. Uslenghi, INAF - IASF Milano (Italy)

- 7732 20 **EXIST deep observations of the Galactic Center Region** [7732-71]
M. Focchi, L. Natalucci, INAF - IASF Roma (Italy); J. E. Grindlay, Harvard-Smithsonian Ctr. for Astrophysics (United States); P. Ubertini, A. Bazzano, INAF - IASF Roma (Italy)

SESSION 16 NEW X-RAY/GAMMA-RAY MISSIONS III

- 7732 21 **Development of the Advance Energetic Pair Telescope (AdEPT) for medium-energy gamma-ray astronomy** [7732-72]
S. D. Hunter, NASA Goddard Space Flight Ctr. (United States); P. F. Bloser, The Univ. of New Hampshire (United States); M. P. Dion, NASA Goddard Space Flight Ctr. (United States); M. L. McConnell, The Univ. of New Hampshire (United States); G. A. de Nolfo, S. Son, NASA Goddard Space Flight Ctr. (United States); J. M. Ryan, The Univ. of New Hampshire (United States); F. W. Stecker, NASA Goddard Space Flight Ctr. (United States)
- 7732 22 **A fast scintillator Compton telescope for medium-energy gamma-ray astronomy** [7732-73]
P. F. Bloser, J. M. Ryan, J. S. Legere, M. Julien, C. M. Bancroft, M. L. McConnell, The Univ. of New Hampshire (United States); M. Wallace, R. M. Kippen, S. Tornga, Los Alamos National Lab. (United States)
- 7732 23 **Balloon-borne sub-MeV/MeV gamma-ray observation using a Compton camera with a gaseous TPC and scintillation camera** [7732-74]
S. Kurosawa, H. Kubo, K. Hattori, C. Ida, S. Iwaki, N. Higashi, S. Kabuki, Y. Kishimoto, K. Miuchi, K. Nakamura, H. Nishimura, J. D. Parker, T. Sawano, Kyoto Univ. (Japan); A. Takada, Japan Aerospace Exploration Agency (Japan); M. Takahashi, T. Tanimori, K. Taniue, K. Ueno, Kyoto Univ. (Japan)
- 7732 24 **The 2010 balloon campaign of the Nuclear Compton Telescope** [7732-75]
E. C. Bellm, Univ. of California, Berkeley (United States); J.-L. Chiu, National Tsing Hua Univ. (Taiwan); S. E. Boggs, Univ. of California, Berkeley (United States); H.-K. Chang, National Tsing Hua Univ. (Taiwan); Y.-H. Chang, National Central Univ. (Taiwan); M. A. Huang, National United Univ. (Taiwan); M. Amman, Lawrence Berkeley National Lab. (United States); M. S. Bandstra, Univ. of California, Berkeley (United States); W.-C. Hung, National Central Univ. (Taiwan); P. Jean, Ctr. d'Etude Spatiale des Rayonnements (France); J.-S. Liang, National Tsing Hua Univ. (Taiwan); C.-H. Lin, Institute of Physics (Taiwan); Z.-K. Liu, National Central Univ. (Taiwan); P. N. Luke, Lawrence Berkeley National Lab. (United States); D. Perez-Becker, Univ. of California, Berkeley (United States); R.-S. Run, National United Univ. (Taiwan); A. Zoglauer, Univ. of California, Berkeley (United States)
- 7732 25 **The scientific and technical drivers of ECLAIRs: the x- and gamma-ray telescope onboard the GRB mission SVOM** [7732-76]
H. Triou, A. Sauvageon, B. Cordier, D. Götz, S. Schanne, IRFU, Service d'Astrophysique, CEA Saclay (France); P. Mandrou, R. Pons, O. Godet, N. Remoué, D. Barret, Ctr. d'Etude Spatiale des Rayonnements (France); J. Atteia, Observatoire Midi-Pyrénées (France); F. Gonzalez, M. Jouret, Le Ctr. Spatiale de Toulouse, CNES (France); C. Lachaud, AstroParticule et Cosmologie (France)

- 7732 26 **Development of efficient Laue lenses: experimental results and projects** [7732-77]
N. Barriere, J. Tomsick, S. Boggs, Univ. of California, Berkeley (United States); J. Rousselle, P. von Ballmoos, Ctr. d'Etude Spatiale de Rayonnements (France)

POSTER SESSION: UV MISSIONS AND TECHNOLOGY

- 7732 27 **FIREBALL : the first ultraviolet fiber fed spectrograph** [7732-78]
S. E. Tuttle, D. Schiminovich, Columbia Univ. (United States); R. Grange, Lab. d'Astrophysique de Marseille (France); S. Rahman, M. Matuszewski, California Institute of Technology (United States); B. Milliard, J.-M. Deharveng, Lab. d'Astrophysique de Marseille (France); D. C. Martin, California Institute of Technology (United States)
- 7732 28 **FIREBALL: detector, data acquisition and reduction** [7732-79]
S. Rahman, M. Matuszewski, California Institute of Technology (United States); S. E. Tuttle, Columbia Univ. (United States); D. Vibert, B. Milliard, Lab. d'Astrophysique de Marseille (France); D. Schiminovich, Columbia Univ. (United States); D. C. Martin, California Institute of Technology (United States); S. Frank, Lab. d'Astrophysique de Marseille (France); J. Evrard, F. Mirc, Ctr. National d'Etudes Spatiales (France)
- 7732 29 **FIREBALL: instrument pointing and aspect reconstruction** [7732-80]
M. Matuszewski, California Institute of Technology (United States); J. Evrard, F. Mirc, Ctr. National d'Études Spatiales (France); R. Grange, S. Frank, B. Milliard, Lab. d'Astrophysique de Marseille (France); S. E. Tuttle, Columbia Univ. (United States); S. Rahman, D. C. Martin, California Institute of Technology (United States); D. Schiminovich, Columbia Univ. (United States); R. McLean, California Institute of Technology (United States); R. G. Chave, Robert Chave Applied Physics Inc. (United States)
- 7732 2A **Earth-orbiting extreme ultraviolet spectroscopic imaging mission for planetary space science** [7732-81]
K. Sakai, G. Murakami, G. Ogawa, T. Homma, I. Yoshikawa, The Univ. of Tokyo (Japan); K. Yoshioka, Rikkyo Univ. (Japan); M. Ueno, A. Yamazaki, K. Uemizu, Japan Aerospace Exploration Agency (Japan); M. Kagitani, F. Tsuchiya, N. Terada, Tohoku Univ. (Japan)
- 7732 2B **Efficient EUV transmission gratings for plasma diagnostics** [7732-82]
C. Braig, E.-B. Kley, Friedrich-Schiller-Univ. Jena (Germany)

Part Two

- 7732 2C **Description and ray-tracing simulations of HYPE: a far-ultraviolet polarimetric spatial-heterodyne spectrometer** [7732-83]
Y. Bétrémieux, Univ. of California, Davis (United States); J. Corliss, Univ. of Wisconsin-Madison (United States); M. B. Vincent, Univ. of California, Davis (United States); F. E. Vincent, Univ. of California, Davis (United States) and Institut d'Astrophysique de Paris (France); F. L. Roesler, Univ. of Wisconsin-Madison (United States); W. M. Harris, Univ. of California, Davis (United States)

- 7732 2D **Fresnel diffractive imager: instrument for space mission in the visible and UV** [7732-85]
T. Raksasataya, P. Deba, Lab. d'Astrophysique de Toulouse et Tarbes, CNRS, Univ. Paul Sabatier (France); J. P. Rivet, R. Gili, Observatoire de la Côte d'Azur (France); D. Serre, L. Koechlin, Lab. d'Astrophysique de Toulouse et Tarbes, CNRS, Univ. Paul Sabatier (France)
- 7732 2E **It's time for a new EUV orbital mission** [7732-86]
M. P. Kowalski, K. S. Wood, U.S. Naval Research Lab. (United States); M. A. Barstow, Univ. of Leicester (United Kingdom); R. G. Cruddace, U.S. Naval Research Lab. (United States)
- 7732 2F **FIRE: Far-ultraviolet Imaging Rocket Experiment: a sounding rocket telescope** [7732-87]
B. Gantner, J. Green, M. Beasley, R. Kane, Univ. of Colorado at Boulder (United States); B. Lairson, H. Lopez, D. Grove, J. Franetic, Luxel Corp. (United States)
- 7732 2G **Improved EUV filter transmission with plasma cleaning** [7732-88]
B. M. Lairson, D. Grove, R. Smith, H. Lopez, T. Ayers, Luxel Corp. (United States); B. L. Gantner, M. N. Beasley, Univ. of Colorado at Boulder (United States)
- 7732 2H **Hubble Space Telescope: Cosmic Origins Spectrograph FUV detector initial on-orbit performance** [7732-89]
J. B. McPhate, O. H. Siegmund, J. V. Vallerger, Univ. of California, Berkeley (United States); D. J. Sahnou, The Johns Hopkins Univ. (United States) and Space Telescope Science Institute (United States); T. B. Ake, Space Telescope Science Institute (United States); S. V. Penton, K. France, Univ. of Colorado at Boulder (United States); D. Massa, Space Telescope Science Institute (United States); S. N. Osterman, S. Béland, Univ. of Colorado at Boulder (United States); S. R. McCandliss, The Johns Hopkins Univ. (United States)

POSTER SESSION: X-RAY OBSERVATORIES AND OPTICS

- 7732 2I **Using ACIS on the Chandra X-ray Observatory as a particle radiation monitor** [7732-90]
C. E. Grant, B. LaMarr, M. W. Bautz, Kavli Institute for Astrophysics and Space Research, Massachusetts Institute of Technology (United States); S. L. O'Dell, NASA Marshall Space Flight Ctr. (United States)
- 7732 2J **On-orbit calibration status of the hard x-ray detector (HXD) onboard Suzaku** [7732-91]
S. Nishino, Y. Fukazawa, T. Mizuno, H. Takahashi, K. Hayashi, K. Hiragi, M. Mizuno, Hiroshima Univ. (Japan); S. Yamada, The Univ. of Tokyo (Japan); M. Kawaharada, M. Kokubun, Japan Aerospace Exploration Agency (Japan); K. Nakazawa, The Univ. of Tokyo (Japan); S. Watanabe, Japan Aerospace Exploration Agency (Japan); T. Tanaka, Kavli Institute for Particle Astrophysics and Cosmology, Stanford Univ. (United States); Y. Terada, Saitama Univ. (Japan)
- 7732 2K **Computation of the off-axis effective area of the New Hard X-ray Mission modules by means of an analytical approach** [7732-92]
D. Spiga, V. Cotroneo, Osservatorio Astronomico di Brera (Italy)
- 7732 2L **Methods of optimizing x-ray optical prescriptions for wide-field applications** [7732-93]
R. F. Elsner, S. L. O'Dell, B. D. Ramsey, M. C. Weisskopf, NASA Marshall Space Flight Ctr. (United States)

- 7732 2M **Multiband imaging with Fresnel x-ray telescopes** [7732-94]
C. Braig, Friedrich-Schiller-Univ. Jena (Germany); P. Predehl, Max-Planck-Institut für extraterrestrische Physik (Germany)
- 7732 2N **Fresnel lens arrays for x-ray imaging spectroscopy** [7732-95]
C. Braig, Friedrich-Schiller-Univ. Jena (Germany); P. Predehl, Max-Planck-Institut für extraterrestrische Physik (Germany)
- 7732 2O **High-energy astrophysics at the diffraction limit** [7732-96]
C. Braig, Friedrich-Schiller-Univ. Jena (Germany); P. Predehl, Max-Planck-Institut für extraterrestrische Physik (Germany)
- 7732 2P **Effects of the coating optimization on the field of view for a Wolter x-ray telescope** [7732-97]
V. Cotroneo, G. Pareschi, D. Spiga, G. Tagliaferri, Osservatorio Astronomico di Brera (Italy)
- 7732 2Q **Self-consistent computation of x-ray mirror point spread functions from surface profile and roughness** [7732-98]
L. Raimondi, Univ. degli Studi dell'Insubria (Italy) and Osservatorio Astronomico di Brera (Italy); D. Spiga, Osservatorio Astronomico di Brera (Italy)
- 7732 2R **Thin gold layer in NiCo and Ni electroforming process: optical surface characterization** [7732-99]
G. Sironi, Osservatorio Astronomico di Brera (Italy), Univ. degli Studi dell'Insubria (Italy), and Media Lario Technologies (Italy); D. Spiga, L. Raimondi, G. Pareschi, Osservatorio Astronomico di Brera, (Italy); A. Orlandi, G. Borghi, N. Missaglia, Media Lario Technologies (Italy); B. Negri, Agenzia Spaziale Italiana (Italy)
- 7732 2S **Wavefront sensing of x-ray telescopes** [7732-100]
T. Saha, S. Rohrbach, T. Hadjimichael, W. W. Zhang, NASA Goddard Space Flight Ctr. (United States)
- 7732 2T **Improving the ruggedness of silicon pore optics** [7732-103]
M. D. Ackermann, M. J. Collon, R. Günther, R. Partapsing, cosine Research B.V. (Netherlands); M. Bavdaz, K. Wallace, E. Wille, European Space Research and Technology Ctr. (Netherlands); C. van Baren, SRON Netherlands Institute for Space Research (Netherlands); D. Kampf, M. Erhard, Kayser-Threde GmbH (Germany)
- 7732 2U **Lunar liquid mirror telescope: structural concepts** [7732-104]
P. Klimas, N. Rowlands, COM DEV Space Systems (Canada); P. Hickson, The Univ. of British Columbia (Canada); E. F. Borra, S. Thibault, Univ. Laval (Canada)
- 7732 2V **Effects of contamination upon the performance of x-ray telescopes** [7732-105]
S. L. O'Dell, R. F. Elsner, NASA Marshall Space Flight Ctr. (United States); T. Oosterbroek, European Space Research and Technology Ctr. (Netherlands)

POSTER SESSION: X-RAY POLARIMETRY

- 7732 2Y **Soft x-ray polarimeter laboratory tests** [7732-108]
K. D. Murphy, H. L. Marshall, N. S. Schulz, K. Jenks, Massachusetts Institute of Technology (United States); S. J. B. Sommer, Colgate Univ. (United States); E. A. Marshall, The Univ. of New Hampshire (United States)

- 7732 27 **A negative ion time projection chamber x-ray polarimeter for transient sources** [7732-109]
Z. R. Prieskorn, The Univ. of Iowa (United States); J. K. Black, NASA Goddard Space Flight Ctr. (United States) and Rock Creek Scientific (United States); J. E. Hill, CRESST, Universities Space Research Association (United States) and NASA Goddard Space Flight Ctr. (United States); M. J. Strube, NASA Goddard Space Flight Ctr. (United States); C. E. Urba, CRESST, Universities Space Research Association (United States); K. M. Jahoda, NASA Goddard Space Flight Ctr. (United States); P. E. Kaaret, The Univ. of Iowa (United States)

POSTER SESSION: GAMMA-RAY OBSERVATORIES

- 7732 30 **Rolling and tumbling: status of the SuperAGILE experiment** [7732-110]
E. Del Monte, E. Costa, G. Di Persio, I. Donarumma, Y. Evangelista, M. Feroci, I. Lapshov, F. Lazzarotto, INAF - IASF Roma (Italy); M. Mastropietro, INAF - IASF Roma (Italy) and IMIP, CNR (Italy); E. Morelli, INAF - IASF Bologna (Italy); L. Pacciani, INAF - IASF Roma (Italy); M. Rapisarda, ENEA (Italy); A. Rubini, P. Soffitta, M. Tavani, A. Argan, A. Trois, INAF - IASF Roma (Italy)
- 7732 32 **SIDERALE and BIT: a small stratospheric balloon experiment for polar gamma background** [7732-174]
M. Alderighi, INAF - IASF Milano (Italy); E. Caroli, INAF - IASF Bologna (Italy); F. Casini, INAF - IASF Milano (Italy) and Sanitas EG s.r.l. (Italy); S. Cortiglioni, INAF - IASF Bologna (Italy); S. D'Angelo, INAF - IASF Milano (Italy); S. Del Sordo, INAF - IASF Palermo (Italy); M. Fiorini, INAF - IASF Milano (Italy); M. Mancini, INAF - IASF Milano (Italy) and Sanitas EG s.r.l. (Italy); L. Natalucci, INAF - IASF Roma (Italy); E. M. Quadri, INAF - IASF Milano (Italy); E. Ronchi, LEN s.r.l. (Italy); G. Sorrenti, Sanitas EG s.r.l. (Italy); M. Uslenghi, INAF - IASF Milano (Italy)

SESSION 22 POSTER SESSION: SOLAR MISSIONS AND TECHNOLOGIES

- 7732 33 **Stigmatic grazing-incidence x-ray spectrograph for solar coronal observations** [7732-112]
K. Kobayashi, The Univ. of Alabama in Huntsville (United States); J. Cirtain, NASA Marshall Space Flight Ctr. (United States); L. Golub, K. Korreck, P. Cheimets, E. Hertz, D. Caldwell, Harvard-Smithsonian Ctr. for Astrophysics (United States)
- 7732 36 **Definition of an imaging spectrometer meeting the needs of UV solar physics** [7732-176]
C. Ruiz de Galarreta Fanjul, A. Philippon, J.-C. Vial, P. Lemaire, Institut d'Astrophysique Spatiale (France); J.-P. Maillard, Institut d'Astrophysique de Paris (France); C. Buisset, Thales Alenia Space (France); T. Appourchaux, F. Auchère, Institut d'Astrophysique Spatiale (France)
- 7732 37 **A novel forward-model technique for estimating EUV imaging performance: design and analysis of the SUI telescope** [7732-177]
D. Martínez-Galarce, Lockheed Martin Advanced Technology Ctr. (United States); J. Harvey, The College of Optics and Photonics, Univ. of Central Florida (United States); M. Bruner, Berman Science & Technology (United States); J. Lemen, Lockheed Martin Advanced Technology Ctr. (United States); E. Gullikson, Lawrence Berkeley National Lab. (United States); R. Soufli, Lawrence Livermore National Lab. (United States); E. Prast, S. Khatri, L-3 Communications Tinsley Labs. Inc. (United States)

- 7732 38 **High-spectral resolution high-cadence imaging x-ray microcalorimeters for solar physics** [7732-178]
S. R. Bandler, NASA Goddard Space Flight Ctr. (United States) and CRESST, Univ. of Maryland, College Park (United States); C. N. Bailey, NASA Goddard Space Flight Ctr. (United States); J. A. Bookbinder, E. E. DeLuca, Harvard-Smithsonian Ctr. for Astrophysics (United States); J. A. Chervenak, M. E. Eckart, NASA Goddard Space Flight Ctr. (United States); F. M. Finkbeiner, NASA Goddard Space Flight Ctr. (United States) and Wyle Information Systems Inc. (United States); D. P. Kelley, NASA Goddard Space Flight Ctr. (United States) and MEI Technologies (United States); R. L. Kelley, C. A. Kilbourne, F. S. Porter, NASA Goddard Space Flight Ctr. (United States); J. E. Sadleir, NASA Goddard Space Flight Ctr. (United States) and Univ. of Illinois Urbana-Champaign (United States); S. J. Smith, NASA Goddard Space Flight Ctr. (United States) and CRESST, Univ. of Maryland, Baltimore County (United States); R. K. Smith, Harvard-Smithsonian Ctr. for Astrophysics (United States)

POSTER SESSION: MEDIUM X-RAY OBSERVATORIES

- 7732 39 **The Monte Carlo simulation framework of the ASTRO-H X-ray Observatory** [7732-115]
M. Ozaki, M. Ohno, Japan Aerospace Exploration Agency (Japan); Y. Terada, Saitama Univ. (Japan); S. Watanabe, Japan Aerospace Exploration Agency (Japan); T. Mizuno, Hiroshima Univ. (Japan); T. Takahashi, M. Kokubun, M. Tsujimoto, N. Y. Yamasaki, H. Odaka, Y. Takei, Japan Aerospace Exploration Agency (Japan); T. Yuasa, The Univ. of Tokyo (Japan); A. Furuzawa, H. Mori, H. Matsumoto, Nagoya Univ. (Japan); T. Okajima, C. A. Kilbourne, NASA Goddard Space Flight Ctr. (United States); H. Tajima, Kavli Institute for Particle Astrophysics and Cosmology, Stanford Univ. (United States); Y. Ishisaki, Tokyo Metropolitan Univ. (Japan)
- 7732 3A **The thermal analysis of the Hard X-ray Telescope (HXT) and the investigation of the deformation of the mirror foil due to temperature change** [7732-116]
K. Ito, K. Ogi, H. Awaki, Ehime Univ. (Japan); T. Kosaka, Kochi Univ. of Technology (Japan); Y. Yamamoto, Ehime Univ. (Japan)
- 7732 3B **Development of BGO active shield for the ASTRO-H soft gamma-ray detector** [7732-117]
Y. Hanabata, Y. Fukazawa, Hiroshima Univ. (Japan); K. Yamaoka, Aoyama Gakuin Univ. (Japan); H. Tajima, Kavli Institute for Particle Astrophysics and Cosmology, Stanford Univ. (United States); J. Kataoka, Waseda Univ. (Japan); K. Nakazawa, The Univ. of Tokyo (Japan); H. Takahashi, T. Mizuno, Hiroshima Univ. (Japan); M. Ohno, M. Kokubun, T. Takahashi, S. Watanabe, Japan Aerospace Exploration Agency (Japan); M. Tashiro, Y. Terada, Saitama Univ. (Japan); C. Sasaki, Japan Aerospace Exploration Agency (Japan); K. Nakajima, The Univ. of Tokyo (Japan); T. Mizushima, Aoyama Gakuin Univ. (Japan)
- 7732 3C **Monte Carlo simulation study of in-orbit background for the soft gamma-ray detector on-board ASTRO-H** [7732-118]
T. Mizuno, K. Hiragi, Y. Fukazawa, Y. Umeki, Hiroshima Univ. (Japan); H. Odaka, S. Watanabe, M. Kokubun, T. Takahashi, Japan Aerospace Exploration Agency (Japan); K. Nakajima, K. Nakazawa, K. Makishima, The Univ. of Tokyo (Japan); S. Nakahira, Aoyama Gakuin Univ. (Japan); Y. Terada, Saitama Univ. (Japan); H. Tajima, Stanford Univ. (United States)
- 7732 3D **Measuring the EUV and optical transmission of optical blocking layer for x-ray CCD camera** [7732-119]
T. Kohmura, K. Kawai, T. Watanabe, T. Ogawa, S. Ikeda, K. Ushiyama, K. Kaneko, Kogakuin Univ. (Japan); S. Kitamoto, H. Murakami, E. Takenaka, K. Nagasaki, K. Higashi, M. Yoshida,

Rikkyo Univ. (Japan); H. Tsunemi, K. Hayashida, N. Anabuki, H. Nakajima, R. Sakaguchi, K. Shigeyama, S. Uega, Osaka Univ. (Japan); T. G. Tsuru, Kyoto Univ. (Japan); T. Dotani, M. Ozaki, A. Bamba, Institute of Space and Aeronautical Science (Japan); J. S. Hiraga, The Univ. of Tokyo (Japan); K. Mori, Univ. of Miyazaki (Japan)

- 7732 3E **Current status of the pre-collimator development for the ASTRO-H x-ray telescopes** [7732-120]
H. Mori, Japan Aerospace Exploration Agency (Japan) and Nagoya Univ. (Japan); Y. Haba, T. Miyazawa, A. Furuzawa, Y. Tawara, H. Kunieda, Nagoya Univ. (Japan); S. Yamauchi, Nara Women's Univ. (Japan); H. Awaki, Ehime Univ. (Japan); M. Ishida, Y. Maeda, A. Bamba, Japan Aerospace Exploration Agency (Japan); R. Iizuka, Chuou Univ. (Japan); T. Okajima, NASA Goddard Space Flight Ctr. (United States); R. Mushotzky, Univ. of Maryland, College Park (United States)
- 7732 3F **The current status of the reflector production for ASTRO-H/HXT** [7732-121]
A. Furuzawa, T. Miyazawa, K. Yasufumi, K. Matsuda, M. Sakai, Y. Ishida, S. Hara, K. Yamane, N. Yamane, Y. Miyata, K. Sakanobe, H. Kato, Y. Yajima, T. Watanabe, Y. Haba, Y. Tawara, H. Kunieda, K. Yamashita, Nagoya Univ. (Japan); N. Ishida, A. Suzuki, N. Ohtsu, Tamagawa Engineering Co., Ltd. (Japan); M. Ishida, Y. Maeda, H. Mori, K. Tamura, Japan Aerospace Exploration Agency (Japan); H. Awaki, Ehime Univ. (Japan); Y. Namba, Chubu Univ. (Japan); T. Okajima, NASA Goddard Space Flight Ctr. (United States)
- 7732 3G **Vibration properties of hard x-ray telescope on board satellite** [7732-122]
T. Kosaka, Kochi Univ. of Technology (Japan); T. Igarashi, Osaka City Univ. (Japan); H. Awaki, K. Ogi, K. Itoh, Ehime Univ. (Japan); Y. Maeda, M. Ichida, Japan Aerospace Exploration Agency (Japan); A. Furuzawa, T. Miyazawa, H. Kunieda, Nagoya Univ. (Japan)
- 7732 3H **Cooling system for the soft x-ray spectrometer (SXS) onboard ASTRO-H** [7732-123]
R. Fujimoto, Kanazawa Univ. (Japan); K. Mitsuda, N. Yamasaki, Y. Takei, M. Tsujimoto, H. Sugita, Y. Sato, K. Shinozaki, A. Okamoto, Japan Aerospace Exploration Agency (Japan); T. Ohashi, Y. Ishisaki, Y. Ezoe, K. Ishikawa, Tokyo Metropolitan Univ. (Japan); M. Murakami, Univ. of Tsukuba (Japan); S. Kitamoto, H. Murakami, Rikkyo Univ. (Japan); T. Tamagawa, M. Kawaharada, H. Yamaguchi, RIKEN (Japan); K. Sato, A. Hoshino, Kanazawa Univ. (Japan); K. Kanao, S. Yoshida, M. Miyaoka, Sumitomo Heavy Industries, Ltd. (Japan); M. DiPirro, P. Shirron, G. Sneiderman, R. L. Kelley, F. S. Porter, C. A. Kilbourne, J. Crow, A. Mattern, NASA Goddard Space Flight Ctr. (United States); A. Kashani, NASA Ames Research Ctr. (United States) and Atlas Scientific (United States); D. McCammon, Univ. of Wisconsin, Madison (United States)
- 7732 3I **Current status of hard x-ray characterization of ASTRO-H HXT at SPring-8** [7732-124]
T. Miyazawa, A. Furuzawa, Y. Kanou, K. Matsuda, M. Sakai, N. Yamane, Y. Ishida, S. Hara, Y. Miyata, K. Sakanobe, Y. Haba, H. Matsumoto, Y. Tawara, H. Kunieda, Nagoya Univ. (Japan); H. Mori, K. Tamura, Y. Maeda, M. Ishida, Japan Aerospace Exploration Agency (Japan); H. Awaki, Ehime Univ. (Japan); T. Okajima, NASA Goddard Space Flight Ctr. (United States); K. Uesugi, Y. Suzuki, Japan Synchrotron Radiation Research Institute (Japan); N. Ishida, N. Ohtsu, A. Suzuki, Tamagawa Engineering Co., Ltd. (Japan); Y. Ogasaka, K. Yamashita, Japan Science and Technology Agency (Japan)
- 7732 3J **The detector subsystem for the SXS instrument on the ASTRO-H Observatory** [7732-125]
F. S. Porter, J. S. Adams, NASA Goddard Space Flight Ctr. (United States); G. V. Brown, Lawrence Livermore National Lab. (United States); J. A. Chervenak, M. P. Chiao, NASA

Goddard Space Flight Ctr. (United States); R. Fujimoto, Kanazawa Univ. (Japan); Y. Ishisaki, Tokyo Metropolitan Univ. (Japan); R. L. Kelley, C. A. Kilbourne, NASA Goddard Space Flight Ctr. (United States); D. McCammon, Univ. of Wisconsin-Madison (United States); K. Mitsuda, Japan Aerospace Exploration Agency (Japan); T. Ohashi, Tokyo Metropolitan Univ. (Japan); A. E. Szymkowiak, Yale Univ. (United States); Y. Takei, Japan Aerospace Exploration Agency (Japan); M. Tashiro, Saitama Univ. (Japan); N. Yamasaki, Japan Aerospace Exploration Agency (Japan)

- 7732 3K **Operation of the x-ray telescope eROSITA** [7732-126]
M. Fürmetz, P. Predehl, J. Eder, L. Tiedemann, Max-Planck-Institut für extraterrestrische Physik (Germany)
- 7732 3M **Solid state slit camera (SSC) onboard MAXI** [7732-128]
M. Kimura, H. Tsunemi, Osaka Univ. (Japan); H. Tomida, H. Katayama, Japan Aerospace Exploration Agency (Japan)
- 7732 3N **VELA: a fast DEPFET readout circuit for the NHXM Mission** [7732-129]
L. Bombelli, C. Fiorini, A. Marone, Politecnico di Milano (Italy) and Istituto Nazionale di Fisica Nucleare (Italy); M. Uslenghi, M. Fiorini, G. E. Villa, INAF - IASF Milano (Italy); M. Porro, Max-Planck-Institut für extraterrestrische Physik (Germany) and Max-Planck-Institut Halbleiterlabor (Germany); J. Treis, Max-Planck-Institut Halbleiterlabor (Germany) and Max-Planck-Institute for Solar System Research (Germany); S. Herrmann, Max-Planck-Institut für extraterrestrische Physik (Germany) and Max-Planck-Institut Halbleiterlabor (Germany); A. Wassatsch, Max-Planck-Institut für extraterrestrische Physik (Germany) and Max-Planck-Institut für Physik (Germany)
- 7732 3O **The high-energy detector of the New Hard X-ray Mission (NHXM): design concept** [7732-130]
R. Bellazzini, A. Brez, M. Minuti, M. Pinchera, G. Spandre, Istituto Nazionale di Fisica Nucleare (Italy); A. Argan, Istituto Nazionale di Astrofisica (Italy); O. Catalano, INAF - IASF Palermo (Italy); E. Costa, INAF - IASF Roma (Italy); C. Fiorini, Politecnico di Milano (Italy); G. Malaguti, INAF - IASF Bologna (Italy); G. Pareschi, G. Tagliaferri, Osservatorio Astronomico di Brera (Italy); M. Uslenghi, INAF - IASF Milano (Italy)
- 7732 3P **Technologies for manufacturing of high angular resolution multilayer coated optics for the New Hard X-ray Mission: a status report II** [7732-131]
D. Vernani, G. Borghi, R. Binda, O. Citterio, G. Grisoni, J. Kools, F. Marioni, A. Orlandi, A. Ritucci, G. Sironi, G. Valsecchi, Media Lario Technologies (Italy); S. Basso, G. Pareschi, D. Spiga, G. Tagliaferri, Osservatorio Astronomico di Brera (Italy); B. Negri, Agenzia Spaziale Italiana (Italy)

POSTER SESSION: LARGE X-RAY OBSERVATORIES

- 7732 3Q **Mounting and alignment of IXO mirror segments** [7732-132]
K.-W. Chan, Univ. of Maryland, Baltimore County (United States) and NASA Goddard Space Flight Ctr. (United States); W. Zhang, NASA Goddard Space Flight Ctr. (United States); T. Evans, R. McClelland, M. Hong, J. Mazzarella, NASA Goddard Space Flight Ctr. (United States) and SGT, Inc. (United States); T. Saha, NASA Goddard Space Flight Ctr. (United States); L. Jalota, Univ. of Maryland, Baltimore County (United States) and NASA Goddard Space Flight Ctr. (United States); L. Olsen, NASA Goddard Space Flight Ctr. (United States); G. Byron, NASA Goddard Space Flight Ctr. (United States) and SGT, Inc. (United States)

- 7732 3T **Platinum as a release layer for thermally formed optics for IXO** [7732-137]
S. Romaine, R. Bruni, P. Gorenstein, S. Park, P. Reid, Harvard-Smithsonian Ctr. for Astrophysics (United States); B. Ramsey, T. Kester, NASA Marshall Space Flight Ctr. (United States)
- 7732 3U **Performance of multilayer coated silicon pore optics** [7732-138]
M. D. Ackermann, M. J. Collon, cosine Research B.V. (Netherlands); C. P. Jensen, F. E. Christensen, DTU-Space (Denmark); M. Krumrey, L. Cibik, S. Marggraf, Physikalisch-Technische Bundesanstalt (Germany); M. Bavdaz, D. Lumb, B. Shortt, European Space Research and Technology Ctr. (Netherlands)
- 7732 3V **Enhancing the International X-ray Observatory** [7732-139]
R. Danner, D. Dailey, C. Lillie, C. Spittler, Northrop Grumman Aerospace Systems (United States)
- 7732 3W **A tower concept for the off-plane x-ray grating spectrometer for the International X-ray Observatory** [7732-140]
S. Casement, Northrop Grumman Aerospace Systems (United States); R. L. McEntaffer, The Univ. of Iowa (United States); W. Cash, Univ. of Colorado at Boulder (United States); T. Johnson, C. Lillie, D. Dailey, Northrop Grumman Aerospace Systems (United States)
- 7732 3X **Estimate of the background for the x-ray microcalorimeter spectrometer onboard of IXO** [7732-141]
E. Perinati, T. Mineo, INAF - IASF Palermo (Italy); L. Colasanti, S. Lotti, C. Macculi, L. Natalucci, L. Piro, INAF - IASF Roma (Italy)
- 7732 3Y **The TES-based cryogenic anticoincidence detector for IXO: first results from large area prototypes** [7732-142]
C. Macculi, L. Colasanti, S. Lotti, L. Natalucci, L. Piro, INAF - IASF Roma (Italy); D. Bagliani, F. Brunetto, L. Ferrari, F. Gatti, Univ. degli Studi di Genova (Italy); G. Torrioli, Istituto di Fotonica e Nanotecnologie, CNR (Italy); P. Bastia, A. Bonati, Thales Alenia Space Italia S.p.A., (Italy); M. Barbera, Univ. degli Studi di Palermo (Italy); G. La Rosa, T. Mineo, E. Perinati, INAF - IASF Palermo (Italy)
- 7732 3Z **Arc-second alignment and bonding of International X-Ray Observatory mirror segments** [7732-143]
T. C. Evans, SGT, Inc. (United States) and NASA Goddard Space Flight Ctr. (United States); K.-W. Chan, NASA Goddard Space Flight Ctr. (United States) and Univ. of Maryland, Baltimore County (United States); R. McClelland, SGT, Inc. (United States); T. Saha, NASA Goddard Space Flight Ctr. (United States)
- 7732 40 **An assessment of the problem of stray light in the optics of the International X-ray Observatory (IXO)** [7732-144]
F. Spaan, R. Willingale, Univ. of Leicester (United Kingdom)
- 7732 41 **Improving the angular resolution of the conical Wolter-I silicon pore optics (SPO) mirror design for the International X-ray Observatory (IXO)** [7732-145]
R. Willingale, F. H. P. Spaan, Univ. of Leicester (United Kingdom)
- 7732 42 **IXO x-ray mirrors based on slumped glass segments with reinforcing ribs: optical and mechanical design, image error budget, and optics unit integration process** [7732-146]
M. Civitani, S. Basso, Osservatorio Astronomico di Brera (Italy); M. Bavdaz, European Space

Research and Technology Ctr. (Netherlands); O. Citterio, P. Conconi, Osservatorio Astronomico di Brera (Italy); D. Gallieni, A.D.S. International S.r.l. (Italy); M. Ghigo, Osservatorio Astronomico di Brera (Italy); B. Guldemann, European Space Research and Technology Ctr. (Netherlands); F. Martelli, BCV Progetti S.r.l. (Italy); G. Pagano, G. Pareschi, Osservatorio Astronomico di Brera (Italy); G. Parodi, BCV Progetti S.r.l. (Italy); L. Proserpio, B. Salmaso, D. Spiga, G. Tagliaferri, Osservatorio Astronomico di Brera (Italy); M. Tintori, A.D.S. International S.r.l. (Italy); E. Wille, European Space Research and Technology Ctr. (Netherlands); A. Zambra, Osservatorio Astronomico di Brera (Italy)

- 7732 43 **Advances in the active alignment system for the IXO optics** [7732-147]
M. D. Freeman, P. B. Reid, W. Podgorski, D. Caldwell, Harvard-Smithsonian Ctr. for Astrophysics (United States)
- 7732 44 **Impacts on the IXO observing efficiency** [7732-148]
M. Garcia, R. Smith, J. Bookbinder, D. Patnaude, Harvard-Smithsonian Ctr. for Astrophysics (United States); M. Santos-Lleo, M. Ehle, P. Rodriguez, XMM Science Operations Ctr. (Spain)
- 7732 45 **X-ray resolution tests of an off-plane reflection grating for IXO** [7732-149]
B. R. Zeiger, A. Shipley, W. Cash, Univ. of Colorado at Boulder (United States); R. McEntaffer, The Univ. of Iowa (United States)
- 7732 46 **Predicted x-ray backgrounds for the International X-ray Observatory** [7732-150]
R. K. Smith, Harvard-Smithsonian Ctr. for Astrophysics (United States); M. W. Bautz, Massachusetts Institute of Technology (United States); J. Bookbinder, M. R. Garcia, Harvard-Smithsonian Ctr. for Astrophysics (United States); M. Guainazzi, European Space Astronomy Ctr. (Spain); C. A. Kilbourne, NASA Goddard Space Flight Ctr. (United States)
- 7732 47 **Design and analysis of the International X-Ray Observatory mirror modules** [7732-151]
R. S. McClelland, SGT, Inc. (United States); T. M. Carnahan, D. W. Robinson, T. T. Saha, NASA Goddard Space Flight Ctr. (United States)

POSTER SESSION: NEW X-RAY/GAMMA-RAY MISSIONS

- 7732 48 **AXTAR: mission design concept** [7732-152]
P. S. Ray, U.S. Naval Research Lab. (United States); D. Chakrabarty, Kavli Institute for Astrophysics and Space Research, Massachusetts Institute of Technology (United States); C. A. Wilson-Hodge, NASA Marshall Space Flight Ctr. (United States); B. F. Philips, U.S. Naval Research Lab. (United States); R. A. Remillard, A. M. Levine, Kavli Institute for Astrophysics and Space Research, Massachusetts Institute of Technology (United States); K. S. Wood, M. T. Wolff, C. S. Gwon, U.S. Naval Research Lab. (United States); T. E. Strohmayer, NASA Goddard Space Flight Ctr. (United States); M. Baysinger, M. S. Briggs, P. Capizzo, L. Fabisinski, R. C. Hopkins, L. S. Hornsby, L. Johnson, C. D. Maples, J. H. Miernik, D. Thomas, NASA Marshall Space Flight Ctr. (United States); G. De Geronimo, Brookhaven National Lab. (United States)
- 7732 4A **The development of DIOS FXT (Four-Stage X-ray Telescope)** [7732-154]
Y. Tawara, Y. Kurebayashi, S. Sugita, I. Sakurai, T. Masuda, T. Torii, K. Matsushita, Nagoya Univ. (Japan)

- 7732 4B **The x-ray camera of the EXIST/SXI telescope** [7732-155]
M. Uslenghi, M. Fiorini, S. Mereghetti, G. E. Villa, INAF - IASF Milano (Italy); A. Bazzano, INAF - IASF Roma (Italy); P. A. Caraveo, INAF - IASF Milano (Italy); C. E. Fiorini, Politecnico di Milano (Italy) and INAF - IASF Milano (Italy); J. E. Grindlay, Harvard-Smithsonian Ctr. for Astrophysics (United States); L. Natalucci, INAF - IASF Roma (Italy); G. Pareschi, G. Tagliaferri, Osservatorio Astronomico di Brera (Italy); P. Ubertini, INAF - IASF Roma (Italy)
- 7732 4C **The x-ray mirrors for the EXIST/SXI telescope** [7732-156]
S. Basso, G. Tagliaferri, Osservatorio Astronomico di Brera (Italy); L. Natalucci, INAF - IASF Roma (Italy); G. Parodi, BCV Progetti S.r.l. (Italy); G. E. Villa, INAF - IASF Milano (Italy); A. Bazzano, INAF - IASF Roma (Italy); P. A. Caraveo, INAF - IASF Milano (Italy); P. Conconi, R. Della Ceca, Osservatorio Astronomico di Brera (Italy); J. E. Grindlay, Harvard-Smithsonian Ctr. for Astrophysics (United States); G. Pareschi, Osservatorio Astronomico di Brera (Italy); B. D. Ramsey, NASA Marshall Space Flight Ctr. (United States); P. Ubertini, INAF - IASF Roma (Italy); M. C. A. Uslenghi, INAF - IASF Milano (Italy)
- 7732 4D **ProtoEXIST: advanced prototype CZT coded aperture telescopes for EXIST** [7732-157]
B. Allen, J. Hong, J. Grindlay, Harvard-Smithsonian Ctr. for Astrophysics (United States); S. D. Barthelmy, R. G. Baker, N. A. Gehrels, NASA Goddard Space Flight Ctr. (United States); T. Garson, H. S. Krawczynski, Washington Univ. in St. Louis (United States); W. R. Cook, F. A. Harrison, California Institute of Technology (United States); J. A. Apple, B. D. Ramsey, NASA Marshall Space Flight Ctr. (United States)
- 7732 4E **Plans for the first balloon flight of the gamma-ray polarimeter experiment (GRAPE)** [7732-158]
T. P. Connor, C. M. Bancroft, P. F. Bloser, J. S. Legere, M. L. McConnell, J. M. Ryan, The Univ. of New Hampshire (United States)
- 7732 4F **XCAT: the JANUS x-ray coded aperture telescope** [7732-159]
A. D. Falcone, D. N. Burrows, The Pennsylvania State Univ. (United States); S. Barthelmy, NASA Goddard Space Flight Ctr. (United States); W. Chang, Edge Space Systems (United States); D. Fox, J. Fredley, The Pennsylvania State Univ. (United States); N. Gehrels, NASA Goddard Space Flight Ctr. (United States); M. Kelly, The Pennsylvania State Univ. (United States); R. Klar, Southwest Research Institute (United States); D. Palmer, Los Alamos National Lab. (United States); S. Persyn, Southwest Research Institute (United States); K. Reichard, The Pennsylvania State Univ. (United States); P. Roming, Southwest Research Institute (United States); E. Seifert, R. W. M. Smith, The Pennsylvania State Univ. (United States); P. Wood, Southwest Research Institute (United States); M. Zugger, The Pennsylvania State Univ. (United States)
- 7732 4G **Focal plane instrumentation for the Wide-Field X-ray Telescope** [7732-160]
M. W. Bautz, R. F. Foster, Kavli Institute for Astrophysics and Space Research, Massachusetts Institute of Technology (United States); S. S. Murray, The Johns Hopkins Univ. (United States)
- 7732 4H **Ground calibrations of Nuclear Compton Telescope** [7732-161]
J.-L. Chiu, National Tsing Hua Univ. (Taiwan); Z.-K. Liu, National Central Univ. (Taiwan); M. S. Bandstra, E. C. Bellm, Univ. of California, Berkeley (United States); J.-S. Liang, National Tsing Hua Univ. (Taiwan); D. Perez-Becker, A. Zoglauer, S. E. Boggs, Univ. of California, Berkeley (United States); H.-K. Chang, National Tsing Hua Univ. (Taiwan); Y.-H. Chang, National Central Univ. (Taiwan); M. A. Huang, National United Univ. (Taiwan); M. Amman, Lawrence Berkeley National Lab. (United States); S.-J. Chiang, National United Univ.

(Taiwan); W.-C. Hung, National Central Univ. (Taiwan); C.-H. Lin, Institute of Physics (Taiwan); P. N. Luke, Lawrence Berkeley National Lab. (United States); R.-S. Run, National United Univ. (Taiwan); C. B. Wunderer, DESY Photon Science (Germany)

POSTER SESSION: TECHNOLOGY FOR FUTURE OBSERVATORIES

- 7732 4I **A cryo-amplifier working in a double loop-flux locked loop scheme for SQUID readout of TES detectors** [7732-163]
G. Torrioli, Istituto di Fotonica e Nanotecnologie, CNR (Italy); P. Bastia, Thales Alenia Space Italia S.p.A. (Italy); L. Piro, C. Macculi, L. Colasanti, INAF - IASF Roma (Italy)
- 7732 4J **The TET-1 HSRS camera structure: the second flight heritage of Cesium** [7732-164]
M. R. Krödel, J. Habermeyer, ECM Ingenieur-Unternehmen für Energie- und Umwelttechnik GmbH (Germany); I. Walter, F. Schrandt, German Aerospace Ctr. (Germany)
- 7732 4L **Concept for an innovative wide-field camera for x-ray astronomy** [7732-166]
R. Campana, M. Feroci, INAF - IASF (Italy) and Istituto Nazionale di Fisica Nucleare (Italy); A. Vacchi, Istituto Nazionale di Fisica Nucleare (Italy); C. Labanti, INAF - IASF Bologna (Italy); G. Zampa, Istituto Nazionale di Fisica Nucleare (Italy); E. Del Monte, INAF - IASF Roma (Italy) and Istituto Nazionale di Fisica Nucleare (Italy); Y. Evangelista, F. Muleri, INAF - IASF Roma (Italy); L. Pacciani, A. Rubini, INAF - IASF Roma (Italy) and Istituto Nazionale di Fisica Nucleare (Italy); P. Soffitta, E. Costa, I. Donnarumma, F. Lazzarotto, M. Mastropietro, INAF - IASF Roma (Italy); E. Morelli, Istituto Nazionale di Fisica Nucleare (Italy) and INAF - IASF Bologna (Italy); M. Rapisarda, INAF - IASF Roma (Italy) and Istituto Nazionale di Fisica Nucleare (Italy); F. Fuschino, M. Marisaldi, INAF - IASF Bologna (Italy); V. Bonvicini, A. Rashevsky, N. Zampa, Istituto Nazionale di Fisica Nucleare (Italy); F. Perotti, INAF - IASF Milano (Italy); L. Amati, INAF - IASF Bologna (Italy); F. Frontera, INAF - IASF Bologna (Italy) and Univ. degli Studi di Ferrara (Italy); L. A. Antonelli, F. Fiore, G. L. Israel, F. Nicastro, Osservatorio Astronomico di Roma (Italy); M. Orlandini, INAF - IASF Bologna (Italy); G. Baldazzi, Univ. di Bologna (Italy); L. Picolli, M. Grassi, P. Malcovati, Univ. degli Studi di Pavia (Italy)
- 7732 4M **X-ray imaging and spectroscopy performance of a large area silicon drift chamber for wide-field x-ray astronomy applications** [7732-167]
G. Zampa, A. Vacchi, Istituto Nazionale di Fisica Nucleare (Italy); M. Feroci, INAF - IASF Roma (Italy) and Istituto Nazionale di Fisica Nucleare (Italy); C. Labanti, INAF - IASF Bologna (Italy); V. Bonvicini, A. Rashevsky, N. Zampa, Istituto Nazionale di Fisica Nucleare (Italy); R. Campana, E. Del Monte, INAF - IASF Roma (Italy) and Istituto Nazionale di Fisica Nucleare (Italy); Y. Evangelista, F. Muleri, INAF - IASF Roma (Italy); L. Pacciani, A. Rubini, INAF - IASF Roma (Italy) and Istituto Nazionale di Fisica Nucleare (Italy); P. Soffitta, E. Costa, I. Donnarumma, F. Lazzarotto, M. Mastropietro, INAF - IASF Roma (Italy); E. Morelli, Istituto Nazionale di Fisica Nucleare (Italy) and INAF - IASF Bologna (Italy); M. Rapisarda, Istituto Nazionale di Fisica Nucleare (Italy) and ENEA Frascati (Italy); F. Fuschino, M. Marisaldi, INAF - IASF Bologna (Italy); G. Baldazzi, Univ. degli Studi di Bologna (Italy); L. Picolli, M. Grassi, P. Malcovati, Univ. degli Studi di Pavia (Italy)
- 7732 4N **EUV spectroscopy of high-redshift x-ray objects** [7732-168]
M. P. Kowalski, M. T. Wolff, K. S. Wood, U.S. Naval Research Lab. (United States); T. W. Barbee, Jr., Lawrence Livermore National Lab. (United States); M. A. Barstow, Univ. of Leicester (United Kingdom)

- 7732 4O **X-ray pencil beam facility for optics characterization** [7732-169]
M. Krumrey, L. Cibik, P. Müller, Physikalisch-Technische Bundesanstalt (Germany);
M. Bavdaz, E. Wille, European Space Research and Technology Ctr. (Netherlands);
M. Ackermann, M. J. Collon, cosine Research B.V. (Netherlands)
- 7732 4P **Research and development of a gamma-ray imaging spectrometer in the MeV range in Barcelona** [7732-170]
J.-M. Alvarez, J.-L. Galvez, M. Hernanz, J. Isern, Consejo Superior de Investigaciones Científicas (Spain); M. Lozano, G. Pellegrini, Ctr. Nacional de Microelectrónica (Spain);
M. Chmeissani, Institut de Física d'Altes Energies (Spain); E. Cabruja, M. Ullán, Ctr. Nacional de Microelectrónica (Spain)
- 7732 4Q **A brief overview of the Fusion and Astrophysics Data and Diagnostic Calibration Facility** [7732-171]
G. V. Brown, P. Beiersdorfer, J. Clementson, J. Dunn, Lawrence Livermore National Lab. (United States); R. L. Kelley, C. A. Kilbourne, M. Leutenegger, NASA Goddard Space Flight Ctr. (United States); E. W. Magee, J. Park, Lawrence Livermore National Lab. (United States); F. S. Porter, NASA Goddard Space Flight Ctr. (United States); M. Schneider, E. Träbert, Lawrence Livermore National Lab. (United States)
- 7732 4R **Reflectivity and polarization sensitivity of a bent crystal with DLC deposition** [7732-172]
R. Iizuka, S. Kusunoki, A. Tokuno, Y. Tsuboi, S. Takeda, S. Yamamuro, K. Misumi, Chuo Univ. (Japan); H. Akasaka, Nagaoka Univ. of Technology (Japan); N. Ohtake, M. Saito, Tokyo Institute of Technology (Japan)
- 7732 4T **Gallium nitride photocathodes for imaging photon counters** [7732-175]
O. H. W. Siegmund, J. S. Hull, A. S. Tremsin, J. B. McPhate, Univ. of California, Berkeley (United States); A. M. Dabiran, SVT Associates, Inc. (United States)

Author Index

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Martin C. Weisskopf, NASA Marshall Space Flight Center (United States)
Nicholas E. White, NASA Goddard Space Flight Center (United States)
Richard Willingale, University of Leicester (United Kingdom)

Session Chairs

- 1 UV Missions and Technologies
Michael P. Kowalski, U.S. Naval Research Laboratory (United States)
- 2 X-Ray Observatories and Optics
Stephen S. Murray, Harvard-Smithsonian Center for Astrophysics
 (United States)
- 3 X-Ray Polarimetry
Enrico Costa, Istituto Nazionale di Astrofisica (Italy)
- 4 Gamma-Ray Observatories
Nicholas E. White, NASA Goddard Space Flight Center (United States)
- 5 Astrophysical Science Drivers for New Observatories
Takaya Ohashi, Tokyo Metropolitan University (Japan)
- 6 Solar Missions and Technologies
Angela Bazzano, Istituto di Fisica dello Spazio Interplanetario (Italy)
- 7 Medium X-Ray Observatories I
Hiroshi Tsunemi, Osaka University (Japan)
- 8 Medium X-Ray Observatories II
Kirpal Nandra, Imperial College London (United Kingdom)
- 9 Medium X-Ray Observatories III
Fiona A. Harrison, California Institute of Technology (United States)
- 10 Medium X-Ray Observatories IV
Tadayuki Takahashi, Japan Aerospace Exploration Agency (Japan)

- 11 Large X-Ray Observatories I
Martin C. Weisskopf, NASA Marshall Space Flight Center (United States)
- 12 Large X-Ray Observatories II
Takaya Ohashi, Tokyo Metropolitan University (Japan)
- 13 Low-Temperature Detectors
Richard Willingale, University of Leicester (United Kingdom)
- 14 New X-Ray/Gamma-Ray Missions I
Caroline A. Kilbourne, NASA Goddard Space Flight Center (United States)
- 15 New X-Ray/Gamma-Ray Missions II
Stephen S. Murray, Harvard-Smithsonian Center for Astrophysics (United States)
- 16 New X-Ray/Gamma-Ray Missions III
Tadayuki Takahashi, Japan Aerospace Exploration Agency (Japan)