

Journal of
**Astronomical Telescopes,
Instruments, and Systems**

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**Welcome to the *Journal of
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and Systems***

Mark Clampin



Welcome to the *Journal of Astronomical Telescopes, Instruments, and Systems*

I am very happy to welcome you to the first issue of the *Journal of Astronomical Telescopes, Instruments, and Systems* (JATIS), a new refereed journal from SPIE that is designed to promote the development of astronomical instrumentation and techniques. A key motivation for the creation of this journal has been the continuing success of SPIE's Instrumentation in Astronomy conference series, which started in 1972 and remains a focal point for reporting new results in the field. The conference's proceedings have long provided a point of reference for researchers working in astronomical instrumentation and techniques. SPIE's experience in technical journals, combined with the legacy of its conference series, uniquely distinguish JATIS.

The primary goal of JATIS is to provide a refereed journal dedicated to reporting new developments in astronomical instrumentation and its associated technologies. With the growing complexity of observatories on the ground and in space and their instrumentation, these technologies now include engineering, integrated modeling, control systems and sensors, to name a few. Software has also grown in importance, both for instrument control, data pipeline processing, operations, and the ever more sophisticated algorithms required to analyze observations. Finally, large surveys and survey instrumentation are increasingly relying on data mining techniques, while relatively new observational techniques such as transit spectroscopy are increasingly relying on new statistical approaches for retrieval of instrumental signatures and astrophysical parameters.

JATIS will publish peer-reviewed papers covering this diverse range of topics in astronomical instrumentation, systems, and techniques, including:

- X-ray, gamma-ray, and gravitational-wave space telescopes and instrumentation
- Ultraviolet, visible, and infrared space telescopes and instrumentation
- Far-infrared, submillimeter, millimeter, and radio telescopes and instrumentation
- Design of space observatories including space environments, orbit design, deployments, and communications
- Telescope, instrumentation, and analysis techniques for high-contrast imaging of exoplanets

- Ground-based telescopes and instrumentation
- Pointing and control systems, including design, algorithms, and attitude control
- Alignment, integration, and testing of telescopes and supporting instrumentation
- Design of ground-based observatory enclosures and site testing
- Adaptive optics and interferometry for optical/infrared astronomy
- Detector systems for astronomical instrumentation
- System engineering for large observatories
- Imaging camera and spectrograph design
- Integrated modeling of telescopes and instrumentation
- Optical design and manufacturing techniques
- Innovative technologies and materials
- Data analysis techniques, data mining, and statistics
- Observatory operations and science observation scheduling

I hope you will strongly consider JATIS when deciding where to publish your work in these areas. We encourage proposals of topics for special sections that address specific subjects or projects and are also interested in receiving suggestions for review papers, or nominations of authors who might provide useful reviews or tutorials on specific subjects.

I am pleased to announce that JATIS will be free online through the end of 2015. Issues will be printed quarterly at first, increasing in frequency as the journal grows. In addition, papers will be published online shortly after acceptance, with new papers added regularly to each online issue as soon as they are copyedited, typeset, and approved for publication. Authors also have the option of obtaining permanent open access for their papers.

Finally, I wish to draw your attention to the excellent Editorial Board who have agreed to serve as Associate Editors. Their expertise spans the breadth of the field of astronomical instrumentation, wavelengths, and techniques.

- George Angeli, LSST Corp.
- Mark Bautz, MIT
- James Breckinridge, Univ. of Arizona
- Lee Feinberg, NASA Goddard Space Flight Center
- Paul Gorenstein, Harvard-Smithsonian Center for Astrophysics
- Olivier Guyon, Subaru Telescope, National Observatory of Japan, and Univ. of Arizona
- Wayne Holland, UK Astronomy Technology Centre
- Tupper Hyde, National Aeronautics and Space Administration
- Matt Johns, Giant Magellan Telescope Project
- John MacKenty, Space Telescope Science Institute
- Shouleh Nikzad, Jet Propulsion Lab
- Nicole Radziwill, James Madison Univ.

- Suzanne Ramsey, European Southern Observatory
- Motohide Tamura, Univ. of Tokyo and National Astronomical Observatory of Japan
- Peter Wizinowich, W. M. Keck Observatory

It is an exciting time to work on the development of astronomical instrumentation, with several extremely large telescope projects on the ground; numerous very productive space missions, such as the Hubble Space Telescope, Herschel, and Kepler; a new generation of missions, such as the James Webb Space Telescope and Euclid; and game-changing instrumentation, such as extreme adaptive optics coronagraphs just entering service. I look forward to

JATIS becoming the leading refereed journal for reporting the development of astronomical instrumentation in this exciting environment with so many discoveries and breakthroughs to come.

I wish to acknowledge the wonderful support of the SPIE publications staff in planning and launching JATIS, including Karolyn Labes, Eric Pepper, Mary Summerfield, Gwen Weerts, and Karen Klokkevold. I should also like to thank Jim Oschmann, John Mather, Matt Mountain, and Phillip Stahl for valuable discussions and advice in launching this journal.

Mark Clampin
Editor-in-Chief