Journal of Astronomical Telescopes, Instruments, and Systems

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Upcoming special section topics in JATIS

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I am very happy to welcome you to the second issue of the *Journal of Astronomical Telescopes, Instruments, and Systems* (JATIS). Once again the journal features peer-reviewed papers covering all aspects of astronomical telescopes, instruments, and their systems. The scope of papers in this issue ranges from a new technique to phase segmented mirror telescopes using differential optical transfer functions to the first results from a Miniature Exoplanet Radial Velocity Array.

In addition to individual manuscripts, JATIS will also publish special sections devoted to a specialized topic. Special sections present an ideal opportunity to publish concept studies, the status of instrument or mission developments, or focus on the status of particular developments in astronomical instrumentation. Currently, JATIS is preparing its first two special sections. The first is devoted to coronagraphs for the Wide-Field Infrared Survey Telescope—Astrophysics Focused Telescope Assets (WFIRST/AFTA) and will be guest edited by Olivier Guyon and Motohide Tamura. Our second special section celebrates 25 years of the Hubble Space Telescope (HST) and is titled "The Hubble Space Telescope: 25 Years in Space." It will be guest edited by John MacKenty and Ken Sembach. Together with my board of associate editors, we would like to encourage the submission of new ideas for special sections that address specific subjects or projects.

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

An important aspect of any astronomical instrumentation is the analysis and interpretation of data. The study of exoplanets provides an excellent example, with new analysis techniques being applied to coronagraphic observations, the extraction of signals at the few ppm level from transit observations using new statistical approaches and ~meter/sec velocity signatures of exoplanets in radial velocity observations. JATIS encourages the submission of manuscripts that describe and document data-analysis techniques employed in the analysis of data taken with astronomical instrumentation.

In order to continue promoting the journal, JATIS will continue to be free online through the end of 2015 via the SPIE Online Digital Library. JATIS plans to print quarterly, possibly 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 they are approved for publication. Authors also have the option of obtaining permanent open access for their papers.

Finally, the next SPIE Astronomical Telescopes and Instrumentation conference is approaching. The meeting will be held in Edinburgh, Scotland, in June 2016. We urge authors planning to submit a paper to one of the programs at the meeting to consider developing their papers for submission to JATIS.

Mark Clampin
Editor-in-Chief