

GILDA E. BALLESTER
Senior Research Scientist
University of Arizona
Department of Planetary Sciences, Lunar and Planetary Laboratory

Research Interests:

Characterization of exoplanets with transit observations at UV, optical and near-IR wavelengths with the Hubble Space Telescope and through collaborative ground-based observations. This research focuses on the properties of the lower, middle and upper atmospheres of hot Jupiters and low-density super Earths, and of magnetospheric interactions on these exoplanets. Collaborations on magnetospheric and atmospheric modeling of exoplanets and comparison with observations, and some solar system science. Earlier research on Io's atmosphere and plasma torus, and on the upper atmospheres, auroras and magnetospheric interactions of Jupiter, Saturn and Uranus with both imaging and spectroscopy.

Education:

- Ph.D. (Physics) 1989, and M.S. (Physics) 1984, Johns Hopkins University, Baltimore, MD
- B.S. (Physics) 1980, Magna Cum Laude, Universidad de Puerto Rico, Río Piedras, PR

Professional Experience:

- 2014- Senior Research Scientist, Univ. of Arizona, Dept. of Planetary Sciences, Lunar & Planetary Laboratory, Tucson, AZ.
- 2000-2014 Associate Staff Scientist, Univ. of Arizona, Lunar & Planetary Lab., Tucson, AZ.
- 1997-2000 Associate Research Scientist, Univ. of Michigan, Dept. Atmos., Oc. & Space Sciences, Space Physics Research Lab., Ann Arbor, MI.
- 1993-1997 Assistant Research Scientist, Univ. of Michigan, Dept. Atmos., Oc. & Space Sciences, Space Physics Research Lab., Ann Arbor, MI.
- 1992 Associate Research Scientist, Center for Astrophysical Sciences, Johns Hopkins Univ.
- 1991-1992 Postdoctoral Fellow, Dept. Earth Sciences, University of Oxford, U.K.
- 1989-1990 NSF-NATO Postdoctoral Fellow, Dept. Atm. Oc. & Planet. Physics, Univ. of Oxford, U.K.
- 1983-1989 Research Assistant & Postdoc, Dept. Physics & Astronomy, Johns Hopkins University
- 1979-1983 Teaching Assistant, Gen. Physics: U. Puerto Rico; U. Sagrado Corazón; Johns Hopkins U.

Professional Activities:

- Guest Observing: IUE, IRTF, FUSE, HST
- Instrument Definition/Science Team Member: HST WFPC2 Camera
- Proposal Review Panels: EUVE, NASA, HST
- Proposal Reviewing: NASA, NSF
- Refereeing: *Science*, *Nature*, *Icarus*, *Geophys. Res. Letters*, *J. Geophys. Res.*, *Astrophys. J.*

Awards/Honors:

- 1981 NSF Fellowship, Univ. of Puerto Rico
- 1989 Member of Phi Beta Kappa Honorary Society
- 1989 NSF-NATO Postdoctoral Fellowship

- 1994 NASA Group Achievement Awards, HST WFPC2 Camera Science & Camera Calibration Teams
- 1995 Paper of the Year Award, Space Physics Research Laboratory, Univ. of Michigan
- 1998 Latin Woman of the Year Award, Science and Technology, GEMS Cable TV Station
- 2000 Hispanic Engineering Magazine Article
- 2004 Face of “Arizona Almunus” Vol 81/3, p31

Publications:

1. Skinner, T. E., H. W. Moos and G. E. Ballester, “The Spatial Dependence of the Jovian Auroral Emissions”, in *Future of Ultraviolet Astronomy Based on Six Years of IUE Research, NASA CP 2349*, 1984.
2. Ballester, G. E., H. W. Moos, P. D. Feldman, D. F. Strobel, M. E. Summers, J.-L. Bertaux, T. E. Skinner, M. C. Festou and J. L. Lieske, “Detection of neutral oxygen and sulfur emissions near Io using IUE”, *Astrophys. J.*, 219, L33, 1987.
3. Skinner, T. E., M. T. DeLand, G. E. Ballester, K. A. Coplin, P. D. Feldman and H. W. Moos, “Temporal variation of the Jovian H I Lyman alpha emission (1979-1986)”, *J. Geophys. Res.*, 93, 29, 1988.
4. Ballester, G. E., H. W. Moos, P. D. Feldman, D. F. Strobel, T. E. Skinner, J.-L. Bertaux and M. C. Festou, “Io: IUE observations of its atmosphere and the plasma torus”, in *a Decade of UV Astronomy with the IUE Satellite, ESA SP-281*, 79, 1988.
5. McGrath, M. A., H. W. Moos, K. A. Coplin and G. E. Ballester, “Jovian Equatorial H₂ emissions from 1979-1987”, in *a Decade of UV Astronomy with the IUE Satellite, ESA SP-281*, 89, 1988.
6. Livengood, T. A., H. W. Moos and G. E. Ballester, “Phenomenological analysis of Jovian north auroral H₂ Lyman band emissions”, in *a Decade of UV Astronomy with the IUE Satellite, ESA SP-281*, 97, 1988.
7. McGrath, M. A., P. D. Feldman, G. E. Ballester and H. W. Moos, “IUE observations of the Jovian dayglow emission”, *Geophys. Res. Lett.*, 16, 583, 1989.
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9. Ballester, G. E., D. F. Strobel, H. W. Moos and P. D. Feldman, “The atmospheric abundance of SO₂ on Io”, *Icarus*, 88, 1, 1990.
10. Baron, R., R. D. Joseph, T. Owen, J. Tennyson, S. Miller and G. E. Ballester, “Imaging Jupiter’s aurorae in the 3 to 4 micron band of H₃⁺”, *Nature*, 353, 539, 1991.
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12. Trafton, L. M., T. R. Geballe, S. Miller, J. Tennyson and G. E. Ballester, “Detection of H₃⁺ from Uranus”, *Astrophys. J.*, 405, 761, 1993.
13. McGrath, M. A., P. D. Feldman, D. F. Strobel, H. W. Moos and G. E. Ballester, “Detection of [O II] λ 2471 from the Io plasma torus”, *Astrophys. J.*, 415, L55, 1993.

14. Prangé, R., P. Zarka, G. E. Ballester, T. A. Livengood, L. Denis, T. Carr, F. Reyes, S. J. Bame and H. W., Moos, "Observations of a correlated event between UV and radio emissions from the Jovian aurora", *J. Geophys. Res., Planets*, 98, 18779, 1993.
15. Ballester, G. E., S. Miller, J. Tennyson, L. M. Trafton and T. R. Geballe, "Latitudinal temperature variations of Jovian H₃⁺", *Icarus*, 107, 189, 1994.
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18. Prangé, R., C. Emerich, A. Talavera, D. Rego, W. Harris, J. Clarke, G. Ballester, T. Livengood and M. McGrath, "Far UV spectra and images of cometary impacts on Jupiter observed with IUE and HST", in *Proceedings, European SL9/Jupiter Workshop, ESOC*, 52, 191, 1995.
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23. Clarke, J. T., R. Prangé, G. E. Ballester, J. Trauger, R. Evans, D. Rego, K. Stapelfeldt, W. Ip, J.-C. Gérard, H. Hammel, M. Ballav, L. Ben Jaffel, J.-L. Bertaux, D. Crisp, C. Emerich, W. Harris, M. Horanyi, S. Miller, A. Storrs and H. Weaver, "HST far-ultraviolet imaging of Jupiter during the impacts of Comet Shoemaker-Levy 9", *Science*, 267, 1302, 1995.
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33. Prangé, R., D. Rego, Pallier, L. Ben Jaffel, C. Emerich, J. Ajello, J. T. Clarke and G. E. Ballester, "Detection of self-reversed Ly alpha lines from the Jovian aurorae with the Hubble Space Telescope", *Astrophys. J.*, *484*, L169, 1997.
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