

## **Philip B. James**

Born: Kansas City, MO March 18, 1940

Current Position: Senior Research Scientist, Space Science Institute, Boulder, CO

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### **Education**

PhD, University of Wisconsin 1966

BS Carnegie-Mellon University 1961

### **Professional History**

1. Co-I of MARCI / CTX experiment on Mars Reconnaissance Orbiter 2003-
2. Senior Research Scientist, Space Science Institute, Boulder, CO 2006 -
3. Distinguished University Professor, University of Toledo 2001- 2005
4. Chair, Department of Physics and Astronomy University of Toledo 1990-2004
5. Member MOC Team (Mars Observer Camera / Mars Orbiter Camera) 1990 -
6. Physics Department, University of Missouri-St. Louis 1968-1990
7. Member of Viking Mars Orbiter Imaging Team, JPL 1977-1978
8. University of Illinois, Urbana Research Associate 1966-1968

### **Professional Societies**

1. Fellow, American Physical Society
2. Division of Planetary Science, American Astronomical Society
3. American Geophysical Union
4. Sigma Xi

### **Professional Recognition and Service**

1. Chair of Scientific Organizing Committee for 2002 DPS meeting
2. Sigma Xi Dion D. Raftopoulos Award for Outstanding Research, 1998.
3. University of Toledo Outstanding Faculty Research Award, 1999.
4. Member (1983) and Chairman (1985 & 86) of National Academy of Sciences Committee for Graduate NSF Fellowships (Geosciences).
5. Editor and Assistant Editor of *American Journal of Physics*, 1979-1988.
6. Chair Organizing Committees for IAMAP Symposia in Hamburg (1983) and Reading (1989).
7. Member of numerous NASA proposal review panels, 1990-2002.
8. Space Astronomy Update NASA Press Conferences, March 21, 1995 and May 19, 1997.

### **PhD Dissertations (U Toledo)**

1. Bruce Cantor, (Spring, 2000). "Martian Dust Storms: 1999 Mars Orbiter Camera Observations."
2. Boncho Bonev, (Expected Fall 2005). "Effects of Atmospheric Dust on Sublimation of Surface Condensates in the Martian Polar Regions."
3. Jennifer Benson, (Fall, 2006). "Condensate Clouds on Mars."

### Mars Related Publications since 1990

1. James, P.B., L.J. Martin, J.R. Henson, and P.V. Birch: Seasonal Recession of Mars' South Polar Cap in 1986. *J.Geophys.Res.* 95, 1337-1341 (1990).
2. James, P.B.: The Role of Water Ice Clouds in the Martian Hydrological Cycle. *Journal of Geophysical Research* 95, 1439-1445 (1990).
3. James, P.B., R.T. Clancy, S.W. Lee, R. Kahn, R. Zurek, L. Martin, and R. Singer: Observations of Mars Using Hubble Space Telescope Observatory. *The First Year of HST Observations.* A.L. Kinney and J.C. Blades Eds., STScI, Baltimore, Md 161-178 (1991).
4. James, P.B., H.H. Kieffer, and D.A. Paige: *The Seasonal Cycle of Carbon Dioxide on Mars," MARS.* University of Arizona Press (1993).
5. Martin, L.J., P.B. James, A. Dollfus, K. Iwasaki, and J.D. Beish: *Telescopic Observations. MARS,* University of Arizona Press (1993).
6. James, P.B., R.T. Clancy, S.W. Lee, L.J. Martin, R.B. Singer, E. Smith, R.A. Kahn, and R.W. Zurek: *Monitoring Mars with the Hubble Space Telescope: 1990-1991 Observations.* *Icarus* 109, 79-101 (1994).
7. James, P.B., R.T. Clancy, S.W. Lee, L.J. Martin, and J. Bell: *Seasonal Recession of Martian South Polar Cap: 1992 HST Observations.* *Icarus* 123, 87-100 (1996).
8. Clancy, R.T., A.W. Grossman, M.J. Wolff, P.B. James, D.J. Rudy, Y.N. Billawala, B.J. Sandor, S.W. Lee, and D.O. Muhleman: *Water Vapor Saturation at Low Altitudes around Mars Aphelion: A Key to Mars Climate?* *Icarus* 122, 36-62 (1996).
9. Clancy, R.T., M.J. Wolff, P.B. James, E. Smith, Y.N. Billiwala, S.W. Lee, and M. Callan, *Mars Ozone Measurements near the 1995 Aphelion: Hubble Space Telescope Ultraviolet Spectroscopy with the Faint Object Spectrograph.* *J.Geophys.Res.* 101, 12,777-12,783 (1996).
10. James, P.B., J.F. Bell III, R.T. Clancy, S.W. Lee, L.J. Martin, and M.J. Wolff, *Hubble Space Telescope Synoptic Imaging of Mars: 1995 Opposition Observations,* *J.Geophys.Res.* 101, 18,883-18,891 (1996).
11. Wolff, M.J., S.W. Lee, R.T. Clancy, L.J. Martin, J.F. Bell III, and P.B. James, *1995 Observations of martian dust storms using the Hubble Space Telescope,* *J. Geophys. Res.* 102, 1679-1692 (1997).
12. Bell, J.F. III, M.J. Wolff, P.B. James, R.T. Clancy, S.W. Lee, and L.J. Martin, *Mars Surface Mineralogy from Hubble Space Telescope Imaging during 1994-1995: Observations, Calibration, and Initial Results,* *J.Geophys. Res.* 102, 9109-9123 (1997).
13. Bell, J.F., M.J. Wolff, T.C. Daley, D. Crisp, P.B. James, S.W. Lee, J.T. Trauger, and R.W. Evans. *Near Infrared imaging of Mars from HST: Surface reflectance, photometric properties, and implications for MOLA data,* *Icarus* 138, 25-35 (1999).
14. Wolff, M.J., P.B. James, J.F. Bell III, R.T. Clancy, and S.W. Lee, *Hubble Space Telescope Observations of the Martian Aphelion Cloud Belt Prior to the Pathfinder Mission: Seasonal and Interannual Variations,* *J. Geophys. Res.* 104, 9027-9041 (1999).
15. Cantor, B.A., M.J. Wolff, P.B. James, and E. Higgs, *Recession of Martian North Polar Cap: 1990-1997 HST Observations,* *Icarus* 136, 175-191 (1998).
16. Bell III, J.F., M.J. Wolff, P.C. Thomas, and P.B. James, *Mineralogy of the Martian north polar sand sea from Hubble Space Telescope observations, to be submitted to Science,* 1997.
17. Malin, M.C., M.H. Carr, G.E. Danielson, M.E. Davies, W.K. Hartmann, A.P. Ingersoll, P.B. James, H. Masursky, A.S. McEwen, L.A. Soderblom, P. Thomas, J. Veverka, M.A. Caplinger, M.A. Ravine, T.A. Soulanille, and J.T. Warren, *New Views of the Martian Surface: Preliminary Observations from the MGS Aerobraking Orbit by the Mars Orbiter Camera,* *Science* 279, 1681-1686 (1998).
18. James, P.B., J. Hollingsworth, S.W. Lee, and M.J. Wolff, *North Polar Dust Storms in Early Spring on Mars,* *Icarus* 138, 64-73 (1999).

19. Mischna, M.A., J.F. Bell III, P.B. James, and D. Crisp, Synoptic measurements of Martian winds using the Hubble Space Telescope, *Geophys. Res. Letters* 25, 611-614 (1998).
20. Clancy, R.T., M.J. Wolff, and P.B. James, "Minimal aerosol loading and global increases in atmospheric ozone during the 1996-97 Martian northern spring season, *Icarus* 138, 49-63 (1999).
21. Thomas, P.C., M.C. Malin, M.C., M.H. Carr, G.E. Danielson, M.E. Davies, W.K. Hartmann, A.P. Ingersoll, P.B. James, A.S. McEwen, L.A. Soderblom, and J. Veverka. Bright dunes on Mars. *Nature* 397, 592-594.
22. Hartmann, W.K., M.C. Malin, M.H. Carr, A. McEwen, G.E. Danielson, W.K. Hartmann, A.P. Ingersoll, P.B. James, L.A. Soderblom, P.C. Thomas, and J. Veverka. Evidence for recent volcanism on Mars from crater counts. *Nature* 397, 586-589 (1999).
23. P.B. James and S.W. Lee. Hubble Space Telescope observations of planets and satellites. *Annual Reviews of Earth and Planetary Science* Vol. 27: 115-148 (1999).
24. James, P.B., B.A. Cantor, M.C. Malin, K. Edgett, M.H. Carr, G.E. Danielson, A.P. Ingersoll M.E. Davies, W.K. Hartmann, A.S. McEwen, L.A. Soderblom, P.C. Thomas, and J. Veverka. The 1997 Spring Regression of the Martian South Polar Cap: Mars Orbiter Camera Observations. *Icarus* 144, 410-418 (2000).
25. Cantor, B.A., M. Wolff, P. Thomas, P. James, and G. Jensen. Aperture Photometry of Phobos: 1994-1997 HST Observations. *Icarus* 142: 414-420 (1999).
26. Malin, M.C., J. Bell, W. Calvin, R.T. Clancy, R.M. Haberle, P.B. James, S.W. Lee, P.C. Thomas, and M.A. Caplinger. The Mars Color Imager (MARCI) on the Mars Climate Orbiter. *J. Geophys. Res.* 106, 17,651-17,672 (2001).
27. Thomas, P., J. Veverka, R. Sullivan, D.P. Simonelli, M. C. Malin, M. Caplinger, W.K. Hartmann, and P.B. James, Phobos: Regolith and ejecta blocks investigated with Mars Orbiter Camera images, *J. Geophys. Res.* 105, 15,091-15,106 (2000).
28. Thomas, P.C., M.C. Malin, K.S. Edgett, M.H. Carr, W.K. Hartmann, A.P. Ingersoll, P.B. James, L.A. Soderblom, J. Veverka, and R. Sullivan. North-South Geological Differences between Mars' Residual Polar Caps. *Nature* 404, 161-164 (2000).
29. Clifford, Stephen M. et al.. The State and Future of Mars Polar Science and Exploration. *Icarus* 144: 210-242 (2000).
30. James, P.B., B.A. Cantor, and S. Davis. MOC Observations of the Martian South Polar Cap in 1999-2000. *J. Geophys. Res.* 106, 23,635-23,652 (2001).
31. Cantor, B.A., P.B. James, and M. Caplinger. Martian Dust Storms: 1999 MOC Observations. *J. Geophys. Res.* 106, 23,653-23,689 (2001).
32. James, P.B. and B.A. Cantor. Martian North Polar Cap Regression: 2000 Mars Orbiter Camera Observations. *Icarus* 154, 131-144 (2001).
33. Hollingsworth, J.L., P.B. James, R.M. Haberle, M.C. Malin, S.W. Lee, and J. Schaeffer. Stirring it up in Mars' Atmosphere: Cyclones, Anticyclones, and Frontogenesis. *Icarus* (in press).
34. James, P.B. and B.A. Cantor. Atmospheric Monitoring of Mars by the Mars Orbiter Camera on Mars Global Surveyor. *Advances in Space Research* 29, 121-129 (2002).
35. Bonev, B.P., James, P.B., Bjorkman, J.E., and Wolff, M.J.. Regression of the Mountains of Mitchel polar ice after the onset of a global dust storm on Mars. *Geophysical Research Letters* 29, 2017 (2002).
36. Benson, J., Bonev, B., James, P.B., Shan, K., Cantor, B.A., and Caplinger, M.A. A Study of Seasonal & Short Period Variation of Water Ice Clouds in the Tharsis and Valles Marineris Regions of Mars with Mars Global Surveyor *Icarus* 165, 34-52 (2003).
37. James, P.B., G. Hansen, and T. Titus, The CO<sub>2</sub> Cycle, *Advances in Space Research*, 35/1, 14-20 (2005).
38. Benson, J.L. and P.B. James. Yearly Comparisons of the Martian Polar Caps: 1999-2003 Mars Orbiter Camera Observations. *Icarus* 174, 513-523 (2005).

39. James, P.B., B.P. Bonev, and M.J. Wolff. Visible Albedo of Mars' South Polar Cap: 2003 HST Observations. *Icarus* **174**, 596-599 (2005).
40. P.C. Thomas, M.C. Malin, P.B. James, B.A. Cantor, R.M.E. Williams and P. Gierasch. South polar residual cap of Mars: Features, stratigraphy, and changes. *Icarus* **174**, 535-559 (2005).
41. Bonev, P.B., G.B. Hansen, D.A. Glenar, P.B. James, and J.E. Bjorkman. Near-perihelion global dust storms and the stability of the perennial south polar cap on Mars. *Planetary and Space Science* (in press).
42. Benson, J.L., P.B. James, B.A. Cantor, and R. Remigo. Interannual variability of water ice clouds over major Martian volcanoes observed by MOC. *Icarus* **184**, 365-372 (2006).
43. Benson, J.L., D.A. Glenar, P.B. James, and M.J. Wolff. Properties of Mars aphelion volcano clouds from combined Mars Global Surveyor MOC and TES measurements. *Icarus* (in press).
44. Malin et al. Instrument paper.
45. James, P.B., P.C. Thomas, M.J. Wolff, and P.B. Bonev. MOC observations of four Mars year variations in south polar residual cap of Mars. *Icarus* (in press).
46. Climate, weather, and north polar observations from the Mars Reconnaissance Orbiter Mars color imager. *Icarus* (in press).