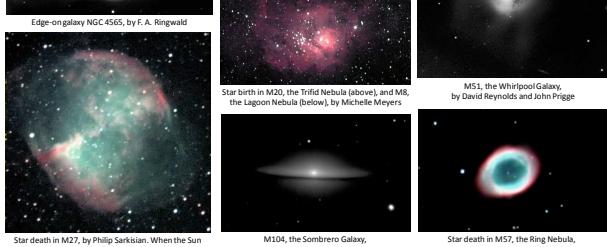
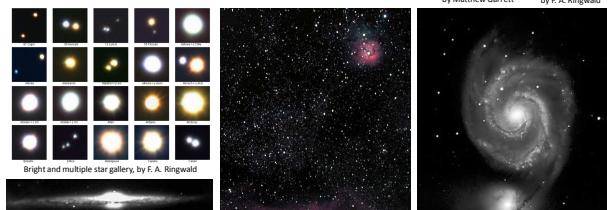
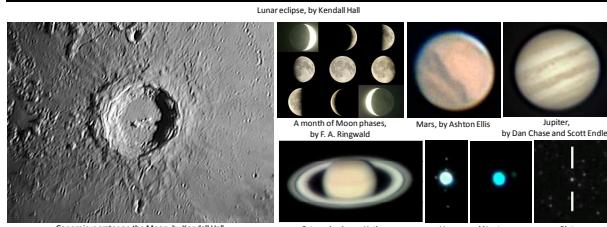


# Fresno State's Observatories

Students train at **Fresno State's Campus Observatory**, near the Downing Planetarium.



**Fresno State Physics** has a vigorous **Astronomy program**, with our Campus Observatory, our station at Sierra Remote Observatories, and our work with *Hubble Space Telescope* and other NASA spacecraft.

Students are welcome to participate in hands-on research on exoplanets, cataclysmic variable stars, flare stars, and black holes.

Professor Frederick A. Ringwald, with Fresno State undergraduates Ashton Ellis, Matthew Garrett, Kendall Hall, Aaron Hathaway, Kelly Khamvongsa, Nathan Miller, José Ortiz, Jonathan Roveto, Philip Sarkisian, and Lorin Zozaya, and graduate students Dan Chase, Randal Clark, Scott Endler, Simon Gonzalez, Michelle Meyers, John Prigge, David Reynolds, Gerald Rude, Dillon Trelawny, and Kenia Velasco (Department of Physics) and Dr. Greg Morgan (Central Valley Astronomers)

## How much of an improvement is the remote observatory?

Campus Observatory



Notice how the remote observatory's image covers more of the sky, because of the larger telescope optics and camera. It shows fainter objects because of the dark sky, away from city lights. It also shows more detail, because the remote observatory is at an altitude of 4910 feet, above the obscuring turbulence of Fresno's air.

Fresno State's station at Sierra Remote Observatories



We do research at **Fresno State's station at Sierra Remote Observatories**, 47 miles from Fresno's city lights, near Shaver Lake.



My students and I operate the station mainly from campus, over the Internet.

The station was among the first eight Sierra Remote Observatories, built in 2007. There are now over 20. The project was founded by Dr. Greg Morgan, Dr. Keith Quattrochi, and Dr. Mel Helm, and is now operated by Larry Van Vleet. We also thank the Downing family for the Downing Planetarium, which began all of this.

### Publications from Fresno State's station at Sierra Remote Observatories

Papers published in refereed journals, with student co-authors underlined.

(7) Ringwald, F. A., Rude, G. D., Roveto, J. J., Khamvongsa, K. S. 2012, *New Astronomy*, 17, 570-575, "The Photometric Period and Variability of the Cataclysmic Variable V849 Herculis (PG 1633+115)"

(6) Rude, G. D. & Ringwald, F. A. 2012, *New Astronomy*, 17, 533-536, "A Search for Superhumps in the Cataclysmic Variable SW Sextantis"

(5) Rude, G. D. & Ringwald, F. A. 2012, *New Astronomy*, volume 17, pages 453-457, "The Photometric Periods of the Nova-like Cataclysmic Variable O Pegasi (PG 2233+115)"

(4) Rude, G. D. & Ringwald, F. A. 2012, *New Astronomy*, volume 17, pages 442-445, "The Photometric Periods of the Nova-like Cataclysmic Variable HV Andromedae"

(3) Ringwald, F. A., Velasco, K., Rude, G. D., & Meyers, M. E. 2012, *New Astronomy*, volume 17, pages 433-437, "The Orbital Period and Negative Superhumps of the Nova-like Cataclysmic Variable V378 Pegasi"

(2) Shears, J., Campbell, T., Foote, J., Garrett, R., Hager, T., Julian, W. M., Kemo, J., Mail, G., Miller, J., Patterson, J., Richmond, M., Ringwald, F., Roberts, G., Ruiz, J., Sabo, R., & Stein, W. 2011, *Journal of the British Astronomical Association*, volume 212, pages 96-104, "The orbital and superhump periods of the deep-eclipsing dwarf novae SSOS J150246.98+333423.9"

(1) Kato, T., (50 co-authors) Ringwald, F. A. & (7 co-authors), 2010, *Publications of the Astronomical Society of Japan*, volume 62, pages 1525-1584, "Survey of Period Variations of Superhumps in SU UMa-Type Dwarf Novae. II: The Second Year (2009-2010)"

### Masters of Science theses, for the Department of Physics, California State University, Fresno

(4) The 2012 Outburst of the Soft X-ray Transient/Black Hole Candidate Swift J1910.2-0546/MAXI J1910-057 (2013), by Trelawny, Dillon.

(3) Detecting Waves in Accretion Disks (2012), by Rude, Gerald.

(2) Waves in an Accretion Disk: Negative Superhumps in V378 Pegasi (2010), by Velasco, Kenia.

(1) A Search for Extrasolar Planets Using Echoes Produced in Flare Events (2009), by Clark, Randal Eugene.

