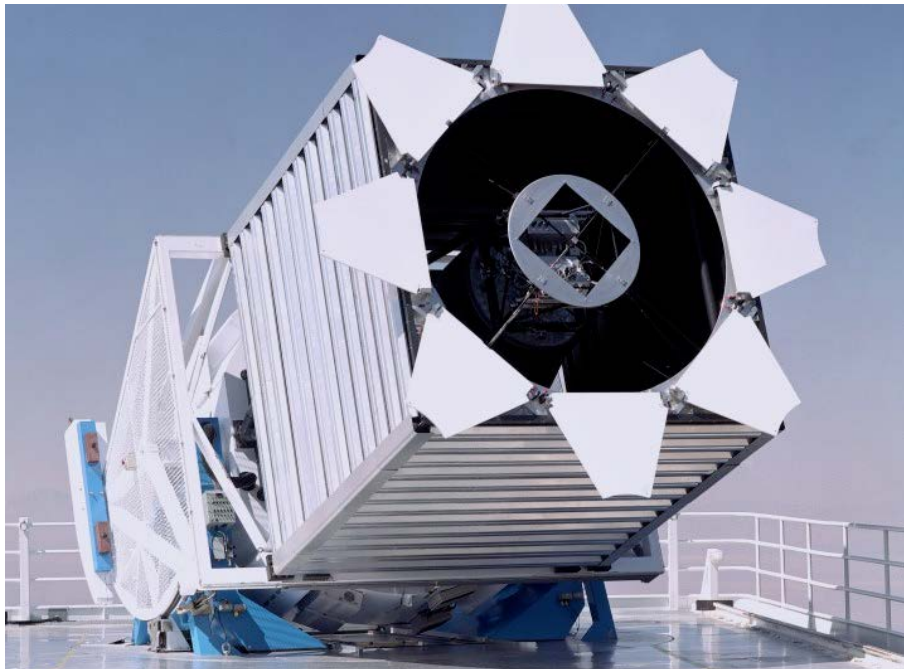


# ASTR 402: INTRODUCTION TO ASTRONOMICAL OBSERVATIONS AND TECHNIQUES

SPRING 2023 SEMESTER

NMSU ASTRONOMY DEPARTMENT



**Announcing a 400-level astronomy course**  
In the Spring 2023 semester, the NMSU Astronomy Department will offer a calculus-based course on collecting and analyzing astronomical observations.

This course is designed for students interested in astrophysics who want to learn about techniques for obtaining and analyzing astronomical data. It will examine the process of using astronomical observations to learn about the universe — from experimental design to observational tools to data analysis — and will include an observing project using a local telescope.

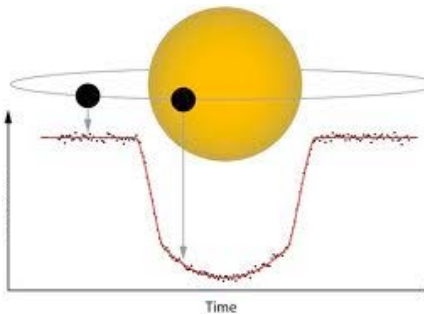
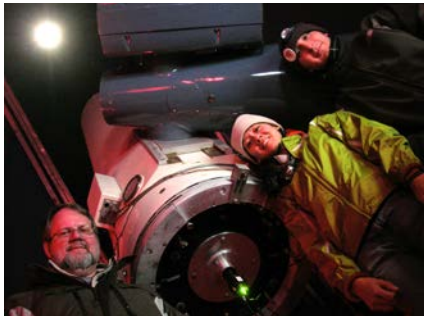
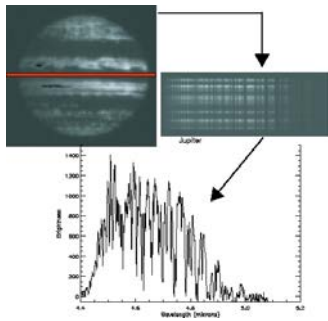
• Meeting day and time:  
Tues/Thurs, 9:00-10:15am

• Prerequisites:

- MATH 1511G (Calculus and Analytic Geometry I)
- PHYS 2140 (Electricity and Magnetism) or PHYS 1320G (Calculus-Based Physics II)
- ASTR1120G, ASTR1115G, or ASTR401

• This course will count toward the undergraduate minor in Astronomy. **The requirements for an Astronomy minor are described here:** <https://astro.nmsu.edu/undergraduate/undergraduatestudies.html>

Professor: Dr. Jon Holtzman  
Office: 575.646.8181  
Department: 575.646.4438  
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If you are considering a career in an aerospace field, military operations, or you plan to pursue an advanced degree in physics or astronomy, this course will benefit you!

### Topics we will cover in this class:

- fundamental properties of light
- experimental design process
- observational tools (telescopes, detectors)
- observational techniques:
  - imaging
  - spectroscopy
  - time-resolved photometry
- data calibration
- data analysis techniques

### Applications of the above topics:

- astronomical data analysis
- medical imaging
- DoD, DoE data analysis
- database mining

### Workload expectations:

- regular homework assignments
- one large observing project using a local telescope
- two midterm exams
- one final exam

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ASTR 402 class field trip  
 to the VLA (April 2013)

