

Syllabus and course plan* - Astronomy with Digital Cameras
 PHYS2062: ASTRONOMICAL METHODS II, DU Spring 2012
 4 credits, can count toward Astronomy or Physics minor.

THIS WILL BE A HYBRID ONLINE/CLASSROOM CLASS

Course goals: Develop and refine facility and experience with telescopes, software, methods, catalogs, libraries, instruments (particularly CCD cameras) and assorted contents of the universe; use the Student Astronomy Lab and/or internet telescope(s) for observing projects and variable star monitoring, plus occasional use of the 20 inch Clark/Saegmuller refractor for observing, measuring and practicing public instruction. Math tools include: algebra, statistics, calculus, Excel, Mathcad, IDL, C++, etc. Each student will select an observing project to develop during the term, pursue data collection and analysis, and report results on a personal website and in poster format.

Class meets: 1:00-2:45pm Tue@Marlar & Thu/ONLINE at <http://connect.du.edu/2062> plus selected observing evenings, often 930pm Mondays, etc.

Instructor: Prof. Stencel, rstencel@du.edu, 303-871-2135, SSL room 409.

Textbook: Observational Astronomy, by Birney, et al., 2006, Cambridge Press, ISBN 978-0-521-85370-5 [used in both quarters, Phys2061 & 2062]. Software will be provided.

References: S. Howell, Handbook of CCD Astronomy, 2nd ed., 2006 Cambridge press.
 C. Kitchin, Telescopes and Techniques, 1995 Springer.
 J. Meeus, Astronomical Formulae for Calculators, 4ed, 1988, Willmann-Bell.

*Schedule version Tuesday, March 20, 2012**Subject to change as conditions require.*

Week	Classes Moon	Tuesday Topic: in class	Thurs Topic: online connect.du.edu/2062	Observing & projects
1	Mar.27,29 FQ	Ch.8: Detectors & using portfolio.du.edu	Ch8 probs & Ch. 1: Coordinates	www.calsky.com Sat.31 st Chamberlin, 7-10pm
2	Apr. 3,5 Full	Ch.9: CCD Calibration	Ch.9 probs & Ch.2: Time	
3	Apr.10,12 LQ	Ch. 10: Photometry	Ch.10 probs & Ch.3: Charts	*Design your own telescope: project START
4	Apr.17,19 New	Ch.11: Astrometry Start Moonwatch 1	Ch.11 probs & Ch.4: Spheres	
5	Apr.24,26 FQ	Ch.12: Spectroscopy	Ch.12 probs & Ch.5: Light	Sat.28 th Chamberlin, 7-10pm
6	May 1,3 Full	Ch.13: Spectra Moonwatch 1 DUE	Ch.13 probs & Ch.6: Telescopes	
7	May 8,10 LQ	Ch.14: Variable Stars	Ch.14 probs & Ch.7: Atmosph.	*Design your own telescope: project DUE
8	May15,17 New	Ch.15: Solar Observing <i>solar annular eclipse, 5/20</i>	Ch.15 probs & Ch.8 Detectors	*Design your own observatory: project START
9	May 22,24 LQ	Software 1	Final reports 1	Sat. 26 th Chamberlin 7-10pm
10	May 29,31 New	Programming	Final reports 2	*Design your own observatory: project DUE
	6/5	Final = rare Transit of Venus	Summer!	

Attendance in class & online is required! Grading based on combination of attendance, participation, problem sets, quizzes and final exam: A-/B+ @90%, B-/C+ @80%, C-/D+ @70% etc. – see also

<http://mysite.du.edu/~rstencel/Courses/grading.htm>.

Honor code in effect, see website www.du.edu/honorcode .