University of Vermont — Fall 2011 Term
Physics Department — Astronomy 57 "Ancient Astronomy, Calendars & Clocks"
Instructor: Prof. Joanna Rankin (A538 Cook) — Office Hours: W 1-2; Th 4-5

Preliminary Course Syllabus

Monday, Aug. 29 (03 UT) Moon New
Tuesday, Aug. 30 (17 UT) Jupiter Stationary
Tuesday, Aug. 30 (18 UT) Moon at Perigee
Saturday, Sept. 3 (07 UT) Mercury Greatest Elongation West (18°)

Aug. 30, Sept. 1 — Birth of Astronomy/Getting Started

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Prepare: Evans: Chapter §§1.1-1.8
Duncan: Introductions and Chapter 1
Observations: Evans §§1.2, 1.7 in notebook
Assignments: Evans §1.5 in notebook, timelines
Make/use a shadow table (see §§1.5, 1.13) before, on, & after the equinox

Sunday, Sept. 4 (14 UT) Antares 3.7° S of Moon
Sunday, Sept. 4 (17 UT) Moon Waxing Quarter
Thursday, Sept. 8 (09 UT) Mars 5.9° S of Pollux

Sept. 6, 8 — Birth of Astronomy (cont'd)

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Prepare: Evans: Chapter §§1.9-1.18; Duncan: Chapts. 2 & 3
Zodiacal constellations
Observations: Evans §§1.11, 1.16 in notebook
Assignments: Evans §§1.13, 1.15, 1.18 in notebook
Choose culture/calendar of interest

Monday, Sept. 12 (09 UT) Moon Full
Thursday, Sept. 15 (06 UT) Moon at Apogee
Monday, Sept. 16 (15 UT) Jupiter 4.6° S of Moon

Sept. 13, 15 — Celestial Sphere

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Prepare: Evans: Chapter §§2.1-2.8; Duncan: Chapts. 4 & 5
Aristotle: extracts from *On the Heavens*
Observation: Evans §2.8 in notebook
Assignments: Evans §§2.3, 2.7 in notebook
Culture/calendar paper proposal written, corrected & critiqued, due 9/20

Tuesday, Sept. 20 (13 UT) Moon Waning Quarter
Friday, Sept. 23 (06 UT) Mars 4.6° N of Moon
Friday, Sept. 23 (09 UT) Autumnal Equinox

Sept. 20, 22 — Celestial Sphere (cont'd)

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Prepare: Evans: Chapter §§2.9-2.17; Duncan: Chapts. 6 & 7
Observation: Equinox; Evans §2.17 in notebook
Assignments: Formal write-up of §1.18 due 9/27
Evans §§2.10, 2.12, 2.14 in notebook

Tuesday, Sept. 27 (11 UT) Moon New
Wednesday, Sept. 28: (06 UT) Venus 5.4° N of Moon; (18 UT) Spica 2.0° N of Moon
Wednesday, Sept. 28 (20 UT) Mercury Superior Conjunction
Thursday, Sept. 29 (23 UT) Venus 1.3° S of Saturn
Saturday, Oct. 1 (21 UT) Antares 3.9° S of Moon

Sept. 27, 29 — Applications of Spherics

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Prepare: Evans: Chapter §§3.1-3.4; Duncan: Chapts. 8 & 9
Aratus: *Phenomena*
Assignments: Evans: §§3.3-3.4 in notebook
Notebook check: notebooks due 10/4

Tuesday, Oct. 4 (03 UT) Moon Waxing Quarter
Tuesday, Oct. 4 (10 UT) Venus 2.9° N of Spica

Oct. 4, 6 — Applications of Spherics (cont'd)

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Prepare: Evans: Chapter §§3.5-3.8; Duncan: Chapts. 10 & 11
Janus astrolabe instructions
Assignments: Submit finished sundial 10/13
Evans: §§3.6, 3.8 in notebook

Wednesday, Oct. 12: (02 UT) Moon Full; (12 UT) Moon at Apogee
Thursday, Oct. 13 (16 UT) Jupiter 4.7° S of Moon

Oct. 11, 13 ♎
Calendars and Time Reconing
Prepare: Evans: Chapter §§4.1-4.6; Duncan: Chapts. 12 & 13
Assignments: Evans: §§4.2, 4.4 in notebook
Culture paper due 10/20

Thursday, Oct. 20 (03 UT) Moon Waning Quarter
Saturday, Oct. 22 (14 UT) Regulus 5.4° N or Moon

Oct. 18, 20 ♓
Calendars and Time Reconing (cont'd)
Prepare: Evans: Chapter §§4.7-4.12; Duncan: Chapts. 14 & 15
Assignments: Evans: §§4.6, 4.8, 4.12 in notebook
Submit finished astrolabe with your plate 10/25

Wednesday, Oct. 26: (05 UT) Spica 1.9° N of Moon: (12 UT) Moon at Perigee Saturday; (19 UT) Moon New
Friday, Oct. 28 (04 UT) Venus 1.9° N of Moon
Saturday, Oct. 29: (01 UT) Jupiter at opposition; (06 UT) Antares 4.0° S of Moon

Oct. 25, 27
Calendars and Time Reconing (cont'd)
MID-TERM EXAM

Wednesday, Nov. 2 (16 UT) Moon Waxing Quarter

Nov. 1, 3 ♃
Solar Theory
Prepare: Evans: Chapter §§5.1-5.6
Ptolemy: Extracts from the *Almagest*
Assignments: Evans: §§5.4, 5.6 in notebook

Tuesday, Nov. 8 (12 UT) Moon at Apogee
Wednesday, Nov. 9 (15 UT) Jupiter 4.8° S of Moon
Thursday, Nov. 10: (08 UT) Venus 3.9° N of Antares; (20 UT) Moon Full
Friday, Nov. 11 (04 UT) Mars 1.3° N or Regulus

Nov. 8, 10 ♉
Solar Theory (cont'd)
Prepare: Evans: Chapter §§5.7-5.10
Assignments: Evans: §§5.8, 5.10 in notebook

Monday Nov. 14 (03 UT) Mercury greatest E elongation (23°)
Tuesday Nov. 15 (00 UT) Saturn 4.3° N of Spica
Friday, Nov. 18: (15 UT) Moon Waning Quarter: (22 UT) Regulus 5.6° N of Moon

Nov. 15, 17 ☽
The Fixed Stars
Prepare: Evans: Chapter §§6.1-6.10
Observation: Evans §6.3 in notebook
Assignments: Evans: §§6.5, 6.7 in notebook

Tuesday, Nov. 22 (16 UT) Spica 1.9° N of Moon
Wednesday, Nov. 23 (23 UT) Moon at Perigee
Thursday, Nov. 24 (06 UT) Mercury Stationary
Friday, Nov. 25 (06 UT) Moon New

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Sunday, Nov. 27 (04 UT) Venus 2.7° S of Moon
Friday, Dec. 2 (09 UT) Moon Waxing Quarter

Nov. 29, Dec. 1 ☉
Planetary Theory
Prepare: Evans: Chapter §§7.1-7.14
Observation: Evans §7.3 in notebook
Assignments: Evans: §§7.5, 7.8, 7.14 in notebook
Calendar paper due 12/6

Sunday, Nov. 4 ()(UT) Mercury inferior conjunction
Tuesday, Dec. 6: (01 UT) Moon at Apogee; (16 UT) Jupiter 4.9° S of Moon; (22 UT) Aldebaran 5.9° S of Moon
Sunday, Dec. 10 (14 UT) Moon Full

Dec. 6, 8 ♂
Planetary Theory (cont'd)
Prepare: Evans: Chapter §§7.15-7.22
Assignments: Evans: §§7.16, 7.18, 7.22 in notebook

Dec. 9, 7:30 pm
FINAL EXAM (Friday)

Thursday, Dec. 22 (05 UT) Winter Solstice
Tuesday, Jan. 3 (05 UT) Earth at Perihelion