University of Vermont — Fall 2013 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* ☽♌♉

Wednesday, Aug. 28 (10 UT) Moon Waining Quarter
Saturday, Aug. 31: (00 UT) Moon at Apogee; (17 UT) Jupiter 4° N or Moon

Aug. 27, 29 — 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

Monday, Sept. 2 (10 UT) Mars 6° N of Moon
Friday, Sept. 5: (12 UT) Moon New; (13 UT) Venus 1.8° N or Spica

Sept. 3, 5 — 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

Sunday, Sept. 8: (15 UT) Spica 0.8° S of Moon; (21 UT) Venus 0.4° N of Moon
Monday, Sept. 9 (17 UT) Saturn 2° N of Moon; Tuesday, Sept. 10 (13 UT) Mercury Superior Conjunction
Friday, Sept. 12 (17 UT) Moon Waxing Quarter

Sept. 10, 12 — 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 9/17

Sunday, Sept. 15 (17 UT) Moon at Perigee
Thursday, Sept. 19 (11 UT) Moon Full
Friday, Sept. 20 (00 UT) Venus 4° S of Saturn

Sept. 17, 19 — 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 9/24
Evans §§2.10, 2.12, 2.14 in notebook

Sunday, Sept. 22 (2044 UT) Autumnal Equinox
Tuesday, Sept. 24 (19 UT) Mercury 0.8° N of Spica
Friday, Sept. 27: (04 UT) Moon Waining Quarter; (18 UT) Moon at Apogee
Saturday, Sept. 28 (09 UT) Jupiter 5° N of Moon

Sept. 24, 26 — 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 10/3

Tuesday, Oct. 1 (06 UT) Mars 7° N of Moon
Saturday, Oct. 5 (01 UT) Moon New

Oct. 1, 3 — 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 10/12
Evans: §§3.6, 3.8 in notebook

Sunday, Oct. 6 (22 UT) Mercury 3° S of Moon; Monday, Oct. 7 (04 UT) Saturn 1.9° N of Moon
Tuesday, Oct. 8 (12 UT) Venus 5° S of Moon; Monday, Oct. 9 (10 UT) Mercury at greatest ecliptic longitude East (25°)
Thursday, Oct. 10: Mercury 5° S of Saturn; (23 UT) Moon at Perigee; Friday, Oct. 11 (23 UT) Moon Waxing Quarter

Oct. 8, 10 — 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 10/17

Monday, Oct. 14 (22 UT) Mars 1.0° N of Regulus
Wednesday, Oct. 16 (16 UT) Venus 1.6° N of Antares
Saturday, Oct. 19: (00 UT) Moon Full, Penumbral Lunar Eclipse

Oct. 15, 17 — 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 10/22

Monday, Oct. 21 (15 UT) Mercury stationary
Friday, Oct. 25: (14 UT) Moon at Apogee; (22 UT) Jupiter 5° N of Moon

Oct. 22, 24 — Calendars and Time Reconing (cont'd)
MID-TERM EXAM

Sunday, Oct. 27 (00 UT) Moon Waining Quarter
Wednesday, Oct. 30 (01 UT) Mars 6° N of Moon
Friday, Nov. 1: (08) Venus at greatest ecliptic longitude East (47°); (20 UT) Mercury in inferior conjunction
Saturday, Nov. 2 ((07 UT) Spica 0.8° S of Moon

Oct. 29, 31 — Solar Theory
♐ *Prepare*: Evans: Chapter §§5.1-5.6
Ptolemy: Extracts from the *Almagest*
Assignments: Evans: §§5.4, 5.6 in notebook

Sunday, Nov. 3: (13 UT) Moon New: Total Solar Eclipse (partial here)
Friday, Nov. 6: (09 UT) Moon at Perigee; (12 UT) Saturn conjunction
Thursday, Nov. 7: (01 UT) Venus 8° S of Moon; (07 UT) Jupiter stationary

Nov. 5, 7 — Solar Theory (cont'd)
♑ *Prepare*: Evans: Chapter §§5.7-5.10
Assignments: Evans: §§5.8, 5.10 in notebook

Sunday, Nov. 10: (06 UT) Moon Waxing Quarter; (14 UT) Mercury stationary

Nov. 12, 14 — The Fixed Stars
♒ *Prepare*: Evans: Chapter §§6.1-6.10
Observation: Evans §6.3 in notebook
Assignments: Evans: §§6.5, 6.7 in notebook

Sunday, Nov. 17 (15 UT) Moon Full
Monday, Nov. 18 (03 UT) Mercury at greatest ecliptic longitude West (19°)
Friday, Nov. 22: (05 UT) Jupiter 5° N of Moon; (10 UT) Moon at Apogee

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Sunday, Nov. 25 (19 UT) Moon Waining Quarter
Monday, Nov. 26: (04 UT) Mercury 0.3° S of Saturn; (23 UT) Mercury Stationary
Tuesday, Nov. 27 (16 UT) Mars 6° N of Moon
Friday, Nov. 29 (17 UT) Spica 0.9° S of Moon

Nov. 26, 28 — 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 12/3

Sunday, Dec. 1 (10 UT) Saturn 1.3° N of Moon
Tuesday, Dec. 3 (00 UT) Moon New
Wednesday, Nov. 4 (10 UT) Moon at Perigee
Saturday, Dec. 21 (1711 UT) Winter Solstice

Dec. 3 — Planetary Theory (cont'd)
☿ ♀ ♂ ♃ ♄ *Prepare*: Evans: Chapter §§7.15-7.22
Assignments: Evans: §§7.16, 7.18, 7.22 in notebook

Dec. 13, 7:30 am — FINAL EXAM (Friday)