Ancient Astronomy — Daily Schedule Term 3

Course **home page**

See also: **Daily Schedule Term 2**

Week 8 — Continue Solar Theory

- Preparation for Thursday, Oct. 26 — Read Evans Sections 5.5 to 5.8, pp. 221-235 — As Assignment 8 for Thursday, do Parts 2, 3, and 4 of Evans Exercise 5.8, p. 235 using your birthday in 2023 for the last part
- Thursday, Oct. 26 — We did course evals — I was scribe and I will write up what was on the board — I presented Evans Exercise 5.6 on **Solar Eccentricity** — We got Hipparchus's results for e and A to within 1 in the last decimal place — Walker presented Part 1 of Evans Exercise 5.8 and we found the mistake he had been searching for, and was valuable for everybody

Week 9 — Finish Solar Theory — Start the Fixed Stars

- Preparation for Monday, Oct. 30 — Assignment 9 is the completed **Venus** and **Jupiter** plotting projects — Finish reading Chapter 5 — For Monday's presentations we decided that everyone will do all of Evans Exercise 5.10 and in class we will share the presentation of parts of it
- Monday, Oct. 30 — We discussed the magnitude system (which is coming up in Chapter 6) — We cross-checked Pollux and Procyon star phases with Rania's values — We did Parts 1-5 of Exercise 5.10 — At the end of class, we quickly looked at how the Main Circle sundial corrects for Daylight Savings Time, our longitude being 2° west of the standard Pacific Time meridian of 120°, and the Equation of Time
- Preparation for Thursday, Nov. 2 — Study Evans 6.1 to 6.4 — Add the Pollux-vs-Procyon Star Phase diagrams to your Assignment 7 and turn it back in — ALSO, check your values for your star phases against mine before you hand Assignment 7 back in, and flag any that disagree with me by more than a week
- Thursday, Nov. 2 — Precession — Cause of precession — **Law of Sines** and **Law of Cosines** — Parallax — The apparent vs. true position of the Moon — We did Ex. 6.5 in class and got 204° as the longitude of Spica

Week 10 — Finish the Fixed Stars — Observing at the College Observatory — Start Babylonian Planetary Theory

- Monday, Nov. 6 — Meet at 5am — We'll observe Jupiter, Venus, and the Moon with a 10" telescope
- Wednesday, Nov. 8 — Meet at 7:45pm — *Bring a headlamp, there will be no moonlight* — We'll be observing Saturn, and the Andromeda Galaxy, and maybe we will get a sharper view of Jupiter
- Preparation for Thursday, Nov. 9 — Read Evans 6.6 through 7.6, p. 312 — You can just skim 6.9 and 6.10 because the motion called "trepidation" was just a giant misunderstanding
- Thursday, Nov. 9 — We augmented our Venus plots by computing the ecliptic longitude of Venus on Oct. 16 — We reviewed the terminology that Evans introduces with planetary theory — I handed out an improved version of the Spica calculations we did in class on Nov. 2 — Finally, we did Exercise 7.5 (Jupiter's tropical and synodic period) together in class

Week 11 — Finish Babylonian Planetary Theory — Start Greek Epicyclic Theory

- Preparation for Monday, Nov. 13 — Read Evans through Babylonian System A, p. 328 — As Assignment 10, do Evans Ex. 7.8 p. 316
- Monday, Nov. 13 — We used a high-quality gyroscope to gain some intuition about precession — Mac and Brian presented and gave out handouts on Exercise 5.10, Part 6, the calculation of the Equation of Time — We looked at Babylonian System A
- Preparation for Thursday, Nov. 16 — Read Evans through 7.13, p. 347 — We will do the Babylonian System A' part of Evans Ex. 7.11, p. 334 together in class, so you don't need to prepare for it

Week 12 — Ptolemy's Epicyclic Theory — Construction of Ptolemaic Slats

- Preparation for Monday, Nov. 20 — Evans through 7.18, p. 362 — As Assignment 11, do Evans Exercise 7.16, p. 351, the Ptolemaic Slats Project, Parts 1-5 only — The Ptolemaic slats project requires some arts-and-crafts type work, starting with printing the **Ptolemaic slats onto 11x17** paper at 100% — Finally, we'll start Ex. 7.18 together in class, like we did with Ex. 7.11

Week 13 — Ptolemy's Parameters for each Planet's Epicycles — Ptolemaic Cosmology — Cosmology through The Middle Ages

- Preparation for Monday, Nov. 27 — Evans 7.19 to 7.22 — As Assignment 12, Finish Evans Ex. 7.18, Parts 1-4 only (we started this together in class, and my solution is already on the corridor wall)
- Monday, Nov. 27 — We reviewed the theory in Evans 7.19 — In class, we did Evans Ex. 7.20 Parts 1-4 and sketched how you would do Part 5
- Preparation for Thursday, Nov. 30 — **Skip** Evans 7.23 and 7.24, unless you want even more calculations like those we did on Monday — Read Evans 7.25 and 7.26 (pp. 384-403) — Presentations: Hexi, Review the diagram and theory behind $\sigma+\tau=P_M+P_S$; Mac, The life and times of Thabit ibn Qurra; Walker, The Errant Predictions of Ptolemy's lunar theory; Clara, The life and times of Regiomontus; Brian, Compare Tables 7.10 and 7.11 with modern values

Week 14 — Planetary Equatoria — Copernicus and Heliocentric Cosmology

- Preparation for Monday, Dec. 4 — Evans 7.27 to 7.29 — Your last assignment, Assignment 13, not due till Thursday will be Ex. 7.28 — It is a big gluing, scissoring, and threading project! — We will use a bunch of class time to get your planetary equitoria started, and they won't be due until Thursday
- Preparation for Thursday, Dec. 7 — Finish your equatoria — Read Evans 7.30 — Come prepared to debate the merits of 7.29 and 7.30: Heliocentric cosmology vs. Earth-centered cosmology
- Thursday, Dec. 7 — Cosmological Debate — Review for Final

Week 15 — Final — Kepler

- Monday, Dec. 11 — **Final**
- Preparation for Thursday, Dec. 14 — Evans 7.31
- Thursday, Dec. 14 — Discuss Kepler