

Tentative Schedule for PTYS403/503 – Spring 2019

week	dates	Lecture 1	Lecture 2
1	1/10		Introduction / solar system inventory
2	1/15-1/17	Introduction (cont.) units, sample back-of-the-envelope calculations	Continued discussion of notation, distance scales, angular measure, orbital periods
3	1/22-1/24	Planetary Orbits 1: Kepler's laws, Newtons Laws	Planetary Orbits 2: The two body problem
4	1/29-1/31	The restricted three-body problem, Hill sphere, Hohmann transfer orbits	Orbits of small bodies and dust: Radiation pressure
5	2/5-2/7	Orbits of small bodies and dust: Poynting Roberson drag	Yarkovsky effect, Orbital decay
6	2/12-2/14	Electromagnetic forces on charged dust grains, Orbital resonances, Kirkwood gaps, planetary rings	Solar System Formation: Jeans instability
7	2/19-2/21	Mid-Term Exam #1	(NO CLASS)
8	2/26-2/28	Solar System Formation: Angular momentum conservation, protoplanetary disks	Blackbody Radiation, Nature of light and radiation. Solar radiative heating and the equilibrium temperature of the planets
9	3/5-3/7	<i>(spring break)</i>	<i>(spring break)</i>
10	3/12-3/14	Physics of planetary interiors, interior temperature	Tidal forces
11	3/19-3/21	Planetary Atmospheres 1: Introduction, basic structure, retention, exosphere	Planetary Atmospheres 2: Hydrostatic Equilibrium
12	3/26-3/28	Planetary Atmospheres 3: Onset of convection, turbulence, vorticity, circulation	Expanding Atmospheres, Solar Wind
13	4/2-4/4	Blast Waves and Shocks	Solar System Magnetism 1: Overview, dynamo theory
14	4/9-4/11	Mid Term Exam #2	Solar System Magnetism 2: Planetary magnetospheres
15	4/16-4/18	Solar System Magnetism 3 The Sun's magnetic field, solar activity, sunspots	The Heliosphere
16	4/23-4/25	Cosmic Rays and Solar-Energetic Particles	Turbulence in fluids, atmospheres, solar wind, and interstellar space
17	4/30	t.b.d.	
18	5/7	FINAL EXAM T.B.D.	