PRELIMINARY
THE SOLAR SYSTEM – EPSc 171A – FALL 2020

Lecturer
William McKinnon, Rudolph Earth & Planetary Sci. Bldg. 291, 5–5604, mckinnon@wustl.edu
Zoom office hours: Thurs 1–3 pm

Teaching Assistants
Emily Culley
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Zoom office hrs: tbd

Chris Yen
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Zoom office hrs: tbd

Times and Place
MF 2:30–3:50 pm, Brown 100
Hybrid instruction (see details after course schedule)

Text (required)
The Cosmic Perspective: The Solar System, 9th Edition, Bennett, Donahue, Schneider & Voit

Requirements
There will be several homeworks, a couple of short (30-minute) quizzes and a midterm along the way, and a comprehensive final. Assigned readings will come from the text (see lectures below); Lecture will expand and augment the reading. You are not responsible to the “Mathematical Insights” unless they are specifically assigned. The course grade will be based on the final (40%), the homeworks (30%), the quizzes (10%) and the midterm (20%); Homework concepts will make an appearance on the tests and exams. A C- is required to receive a P or CR.

LECTURE AND READING SCHEDULE

<table>
<thead>
<tr>
<th>Number</th>
<th>Date</th>
<th>Lecture</th>
<th>Reading</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>9/14</td>
<td>Introduction to the Solar System</td>
<td>Chap. 1 (except pp. 16-18), Ins. 1.2, Fig. 1.11</td>
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<td>2</td>
<td>9/18</td>
<td>The Heliocentric Revolution</td>
<td>2.2, 2.4, 3.1–3.3; Ins. 3.1, 3.2; Fig. 3.25</td>
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<td>3</td>
<td>9/21</td>
<td>Gravity’s Rainbow</td>
<td>4.1–4.5; Ins. 4.1, 4.3, 4.5</td>
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<td>4</td>
<td>9/25</td>
<td>Workshop of the Telescopes</td>
<td>5.1–5.2, 6.1–6.3, Ins. 5.1</td>
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<tr>
<td>5</td>
<td>9/29</td>
<td>The Sun, Our Nuclear Furnace</td>
<td>Ch 14, p. 194</td>
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<tr>
<td>6</td>
<td>10/2</td>
<td>Deep Time &amp; Quiz 1</td>
<td>pp. 191-193, 7.2, 8.1, 8.2 thru p. 222</td>
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THE DAWN OF HUMANKIND
THE NEAR SHORE

7  10/5  The Space Age                         2.3, extra reading
8  10/9  Moonstruck                            7.3
9  10/12 Once and Future Moon                  9.1, 9.2; Ins. 9.1
10 10/16 Mercury: The Heavy Metal Planet      9.3, p. 195
11 10/19 Meteorites: Cosmic Debris            12.1
12 10/23 Asteroids: Reservoir Dregs           12.2, 12.5
13 10/26 MIDTERM
14 10/30 Earth: Our Violent Planet            9.6, p. 197
15 11/2 Another Green World                   10.1, 10.2; Ins. 10.1
16 11/6 Venus: Earth’s Twisted Sister         9.5, p. 196
17 11/9 Climate Truth or Dare!                10.5–10.6

MARS AND BEYOND THE INFINITE

18 11/13 Mars Attacks! & Quiz 2               9.4, p. 198
19 11/16 Mars Bonfire                         10.4
20 11/20 Digging for Dreams in the Red Sand   24.1
21 11/23 Martian Chronicles                   24.2
22 11/30 Jupiter, Lord of the Planets         11.1, p. 199
23 12/4 Saturn, Lord of the Rings             11.3, p. 200
24 12/7 The Verdant Orbs                      pp. 201-202
25 12/11 The Four Galileans                   11.2 (through p. 328)
26 12/14 Ocean Worlds Ahoy                    Rest of 11.2
27 12/18 Pluto & Beyond!                      12.4, p. 203, 13.1; Fig. 13.6

1/4/21 Review Session                         tbd
1/6/21 FINAL!!                                3:30–5:30 pm

FURTHER DETAILS

No one can guarantee what the fall semester at Washington University will be like, but the following is “the plan.”

To begin, EPSC 171A The Solar System is a survey course, and presumes no particular science or math background, only an interest in the planets and the natural world in general. There are no lab sessions and generally little need for sustained close contact. That said, I find the option of a completely virtual course to be, frankly, dreadful. So even though I am technically in a high risk group (being older), I opted for a hybrid instruction model.

What that means for Solar System, because of the number of people enrolled, is:

1) NO ONE will be required to come to physical lectures, but if you want to...
2) Depending on your last name, you can come to either the Monday (last names A-J) or Friday (last names K-Z) lecture,

3) Brown 100 is a large enough lecture hall to accommodate 50% of the class at any given time, along with proper social distancing,

4) I have not in the past not required attendance, so I think we will likely be O.K. on keeping numbers down,

5) If you don't come to a given lecture, or any of them, there will be on-line versions of the lectures to watch at your leisure ("asynchronous learning"),

6) These posted lectures (through Canvas) will either be recorded in real-time (in which case you can watch them in real time as well), or posted as separate zoom or powerpoint lectures. I anticipate experimenting, along with the course's able TAs, Emily and Chris, with both formats/approaches.

7) Emily and Chris will also be moderating questions in real time during lectures via chat (details tbd).

8) I am not sure exactly how best to give quizzes or tests in the new world order, but will follow the best practices of my peers. When I know how that will go down, I will let you know.

9) Finally, this syllabus will be updated with new, relevant information as necessary.