Astronomy 105 - Exploring The Moon - Winter 2014

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Text: Will be announced in lecture.

Why?: The motivation for this class is pretty simple. For an astonishingly short period, a long time ago (July 1969 to December 1972) humans walked on another world. *Why did we do this, how did we do this, what did we learn, and why do we want to go back?*

Prerequisites: This class is designed to be an extension to the topics that are covered in Astronomy 150 (and to a much lesser extent, Astronomy 101). Astronomy 150 is not a prerequisite, but it would help. A strong interest in space can certainly make up for the missing Astro 150. There will be a little math in the class, but nothing beyond simple algebra.

Class Mailing List: I will be using the class mailing list during class. Please make sure to monitor your `uw.edu` email account or set it to forward email to the account you usually read.

Grading: There will be weekly on-line lecture quizzes, four short ($\sim$ 20 minute) exams, a few homeworks, and one short ($\sim$ 500 word) paper during the quarter. The preliminary dates for the short quizzes are given below (in bold brackets). Please note they may change, but I will give you at least a weeks warning if I am going to change a quiz date.

W Credit: There is a writing credit component available for this class. For the vast majority of you, this will be irrelevant. If you are interested in receiving W credit for this class, send me an email before Jan 11th.

Weekly Online Quizzes: Every week there will be a required online quiz that is based on that week's lectures and readings. The quizzes will be of the short ($\sim$ 15 questions) multiple choice variety. The quiz will be available starting on Friday after lecture (11:00pm) and will only be available until the following Tuesday (12:00 pm). These quizzes are a required part of your grade. Missing a quiz will result in a zero for that quiz, no exceptions.

Week	Mon	Wed	Fri
1	Why	Moon Ages	Physics
2	Rockets	Pre-Apollo	Landing Sites
3	Holiday	Ap 8-10	Spider FETM [**Q1**]
4	Ap 11	Ap 11	Ap 11
5	Ap 12	Ap 12	Ap 12 FETM [**Q2**]
6	Ap 13	Ap 14	Ap 14
7	Holiday	Ap 15	Ap 15
8	Ap 16	Ap 16	Movie [**Q3**]
9	Ap 17	Ap 17	Post Apollo
10	USSR	Why Back?	Final [**Q4**]

There are about a billion acronyms used by **NASA** (National Aeronautics and Space Administration) during the Apollo missions. Here is a very short list of the ones you will encounter most often.

- **ALSEP** - Apollo Lunar Surface Experiment Package - The scientific experiment package set up on the Moon during the last five Apollo missions.
- **CAPCOM** - Capsule Communications - The astronaut back in Houston that communicates with the astronauts on the mission. Passes on instructions and suggestions from the myriad of engineers and scientists on the ground.
- **CDR** - Commander - The leader of the mission - First one out the the LM after it lands on the Moon.
- **CMP** - Command Module Pilot - The astronaut that stays in lunar orbit while the LMP and CMD land on the Moon.
- **CSM** - Command-Service Module - The part of the spacecraft that remained in lunar orbit and returned the astronauts to Earth.
- **EVA** - Extra-vehicular Activity - The time that astronauts spend outside of the spacecraft (i.e. on the surface of the Moon)
- **LM** - Lunar Module - The spacecraft the lands on the Moon.
- **LMP** - Lunar Module Pilot - The other astronaut that lands on the moon.
- **LRV** - Lunar Roving Vehicle - Lunar Rover - The Moon car used on Apollo 15, 16 and 17.

	Apollo 11	Apollo 12	Apollo 14	Apollo 15	Apollo 16	Apollo 17
CDR	Neil Armstrong	Pete Conrad	Alan Shepard	David Scott	John Young	Eugene Cernan
LMP	Edwin Aldrin	Alan Bean	Edgar Mitchell	James Irwin	Charles Duke	Jack Schmitt
CMP	Michael Collins	Richard Gordon	Stuart Roosa	Alfred Worden	Thomas Mattingly	Ronald Evans
CM	*Columbia*	*Yankee Clipper*	*Kitty Hawk*	*Endeavour*	*Casper*	*America*
LM	*Eagle*	*Intrepid*	*Antares*	*Falcon*	*Orion*	*Challenger*

Apollo Mission	Launch Date	Landing Date	Landing Site	Latitude	Longitude	EVA time (hours)	Traverse (km)	Sample Return (kg)
11	16 Jul 1969	20 Jul 1969	Mare Tranquillitatis	0.67 N	23.49 E	2.24	...	21.7
12	14 Nov 1969	19 Nov 1969	Oceanus Procellarum	2.94 S	23.45 W	7.59	1.35	34.4
14	31 Jan 1971	05 Feb 1971	Fra Mauro	3.67 S	17.46 E	9.23	3.45	42.9
15	26 Jul 1971	30 Jul 1971	Hadley Rille	26.11 N	3.66 E	18.33	27.9	76.8
16	16 Apr 1972	20 Apr 1972	Descartes	8.60 S	15.31 E	20.12	27.0	94.7
17	07 Dec 1972	11 Dec 1972	Taurus-Littrow	20.17 N	30.80 E	22.0	30.0	110.5