

Program: Fly Me to the Moon

Speaker: Greg McCauley, Director & CEO, Link Observatory Space Science Institute

Introduced by: Marty Meisenheimer

Attendance: 149

Guests: Mark Albrecht, Bob Fischer, Bill Halsema, Daniel Kinney, Mike Pearce, Joe Powers, Sam Stone, Larry Wilson

Scribe: Hank Wolfla

Editor: Carl Warner

Today's presentation was given by Greg McCauley the executive director of Link Observatory Space Science Institute. The title of his talk was 8 things about the moon you may not know:

1. The first recorded sound in history was captured in 1860 by a French inventor. This 10 second phonograph clip was from "Au Claire de la Lune." The title translates into "By the Light of the Moon."
2. The USA and Russia along with 105 countries signed a treaty in 1967 designating the moon as off-limits for military use. The question remains "who owns the moon?"
3. The "dark-side" of the moon isn't dark; it's just hidden.
4. The moon is rich in helium-3. Helium-3 is a very rare isotope on earth and has multiple energy uses. More specifically, it's an important gas that can be used in nuclear fusion reactions.
5. There are several different kinds of lunar months, each with their own rhythm. A lunar month can be anywhere from 27 to 29 days. Lunar months aren't stable. The moon's orbital period is the time it takes for the moon to complete one orbit around the earth. A Sidereal month is 27.32 days. The moon's orbit around the earth is not circular but elliptical.
6. The moon has a ridiculously wide temperature range between -400 degrees F at the poles to as high as 230 degrees F at the equator.
7. Shadows are darker on the moon. Without an atmosphere to scatter the light, shadows that are cast on the moon render the surface pitch black.
8. The moon wobbles. The moon over one month, experiences "librations" in latitude and in longitude. "Libration" is an apparent or real oscillation of the moon by which parts near the edge of the disc that are often not visible from the earth sometimes come into view.

Other information about the moon included the total solar eclipse that many of our club members were able to see in 2017, and another total solar eclipse is coming right to Indianapolis in 2024 (don't miss out on this one). The total eclipse shadow is 75 miles wide and is called the umbra. A Lunar eclipse is when the earth's shadow blocks sunlight striking the moon. In a total lunar eclipse, the umbra from the earth blocks all the direct sunlight to the moon, and the moon turns a dark red due to sunlight refracted by the Earth's atmosphere.



Greg McCauley with perhaps a record setting Monday meeting crowd. (No gambling on the quality of the talk!)