

NAT161: Topics for the final assessment.

Ensure you **go into depth**, not just a gloss over simple web search summary. **Depth in your content and presentation shows you've learned something beyond general information.** That's what we're looking for in this assessment and will be reflected in the grade received.

Describe In Your Own Words

Back up your words with cited authors & works

1. **The Fermi Paradox:** In your **first slide** and introduction explain what is the Fermi Paradox. The remaining focus of your presentation is on **two (2)** of the Fermi reasons **listed in class** as to **why** we currently haven't found any evidence of intelligent life beyond Earth. Include **WHY** you chose that particular Fermi reason. You may include the **Drake Equation** if you find it helpful in discussing your justification.
2. **SpaceWeather:** Your **first slide** in your introduction explains the definition of Space Weather. In your discussion **include** the **different types** of solar phenomena that contribute to space weather. The main part of your presentation is to **discuss** a few of the medical and physiological **effects of exposure to space weather** on long duration space flights. Knowing about these effects of spaceweather, **conclude** whether **you would personally** go into space and/or on a long duration space flight to Mars. **Explain why** you made that decision and **your reasoning behind it?**
3. **Finding Life in our Solar System:** From our **class discussions**, choose **three (3)** of those possible locations **in our solar system (not Earth or exoplanets)** where we might find life (regardless of intelligence). **Why did you choose this location? – what specifics** led you to think there might be life there? **What** type of life do you think we might find in those locations? **How** might you get to it (on the surface, underground)?
4. **Electromagnetic Spectrum (EM Spectrum):** Define and describe the electromagnetic spectrum. **Select three (3) sections** of the electromagnetic spectrum as identified in our class discussions and worksheet. **For each** section you choose, provide an **example** of uses or applications of that portion of the EM spectrum **in astronomy research**. **Explain in detail** how that portion is **used in astronomy**, and **why** it is **unique** for gaining specific knowledge about the universe. Is there any specific telescope/spacecraft being used for this research? You must be **specific** and provide **depth of knowledge** of the **examples** you use.
5. **An assessment of available smart-phone based star chart apps.** Choose **two (2) FREE** different star charting apps. In your evaluation, **include** a discussion of the **pros-cons** of each app. **Include** platform availability (iOS/Android). Include screen shots. Finally, **discuss** your **recommendation** of the best of the two and **why you made that recommendation?** You are **welcome to demonstrate** or screen capture from your own device.
Note: you do **NOT** need to cite two authored works, but you need to **cite** and **include review comments** from others, as well as **your own thoughts** and whether you agree/disagree with others.
6. **Exoplanet Hunting Methods:** From our **class discussions**, discuss the **two most successful** methods for finding Exoplanets. **Discuss** what each of those two methods are, and in **detail** how they work. **Compare and**

contrast the two methods. **Include** the number of exoplanets found by each of those two methods to date. **Conclude** by stating which of the two methods **you feel** is currently the best. Explain **why** and the **reasoning** for **your decision**?