

AST251 Project 3 – Evaluating Claims of Extraterrestrial Messaging liuzemi2 Planet 1

Friday 22nd March, 2075

We have identified what may be an indication of extraterrestrial intelligence, as well as the planet where it may have originated. This document summarizes the information gathered so far about the candidate message and its candidate planet of origin.

Potential evidence for extraterrestrial intelligence

Astronomers have detected a broadband microwave transmission that appears to have originated from this planet's solar system. The transmission is believed to contain an image and is displayed below with the most likely aspect ratio. The transmission is continuous and does not repeat itself frequently. An excerpt of the transmission is shown below:

```
101100101100000001111011110101110101110111001011101  
100000011010010010001000000100001110111101000111001  
000000101011010101010100110110001011100110101010011  
00111110100110110000000101111110101001001101110000  
110110101011110111000000100011001101011010101001000  
101100111010110111110011111100000110110110010011111  
110100010011110110010000000001000010000011110010010  
101111011011100100001011011111101001010000011101000
```

This signal was first noticed at UTC 2070-10-08/15:53.

Parameters of the candidate planet of origin and its host star

| | |
|----------------------------------|------|
| Spectral Type | G |
| Stellar Luminosity (Solar Units) | 1.05 |
| Stellar Mass (Solar Masses) | 1.01 |
| Distance to Star (lightyears) | 6.5 |
| Planet Mass (Earth masses) | 1.3 |
| Atmospheric Pressure (atm) | 0.7 |

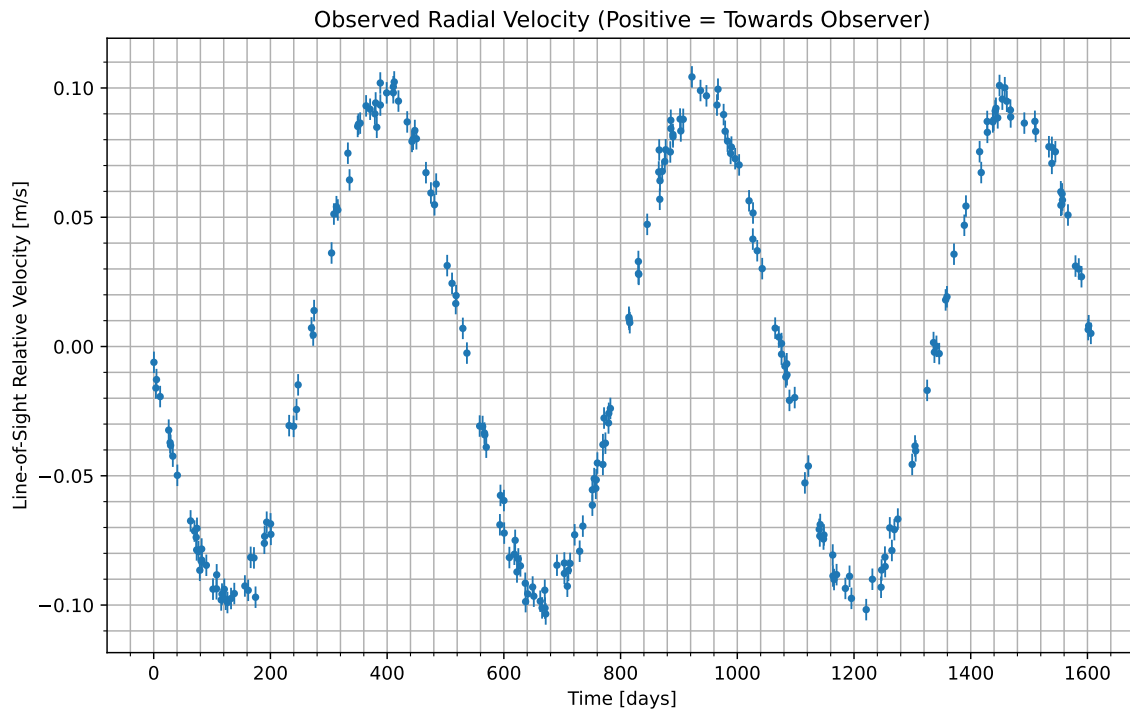


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2070-10-09/07:03. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

| Molecule | Concentration |
|----------|---------------|
| N_2 | 11.6 |
| CO_2 | 61.7 |
| H_2O | 26.7 |

Gas Abundance (percent by volume)

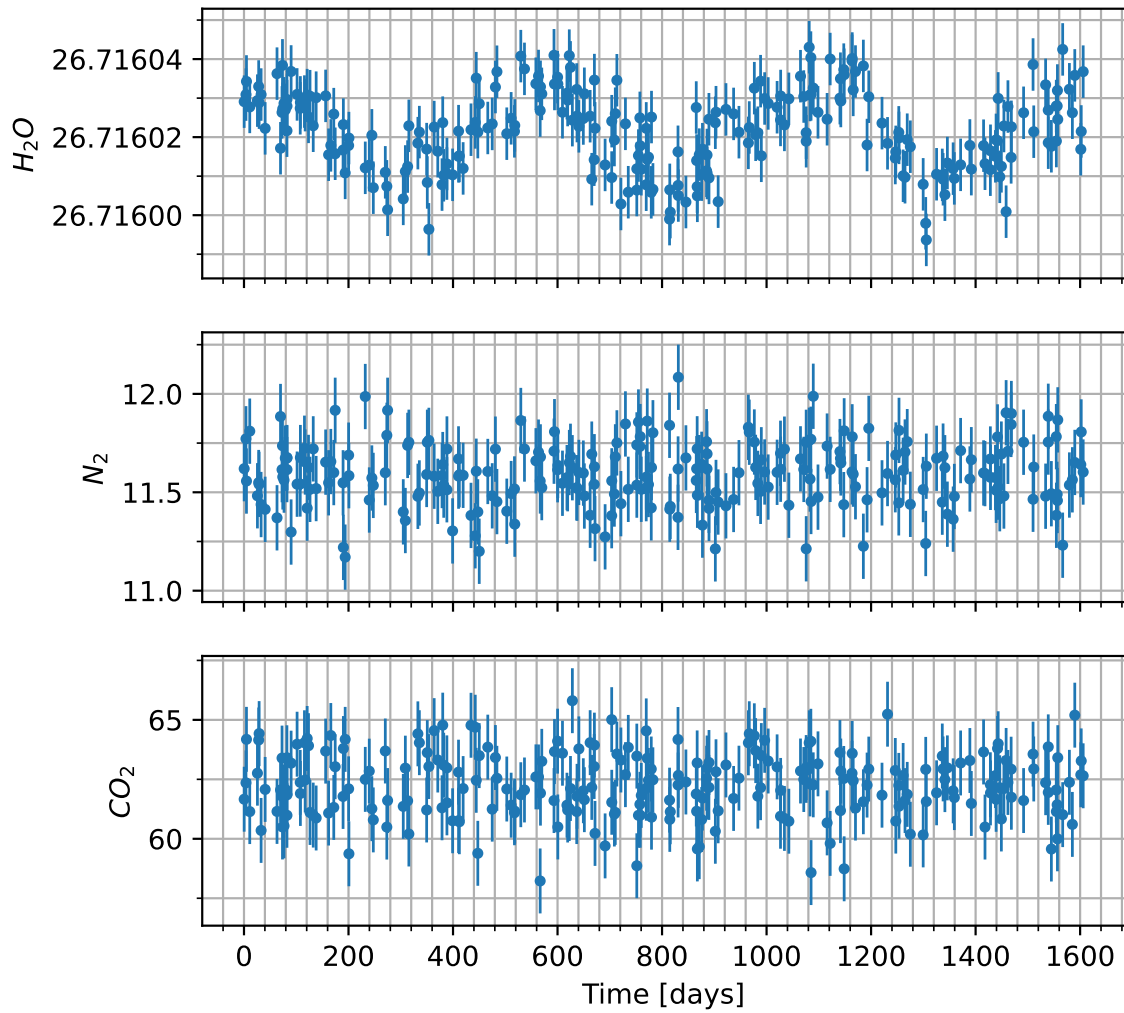


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

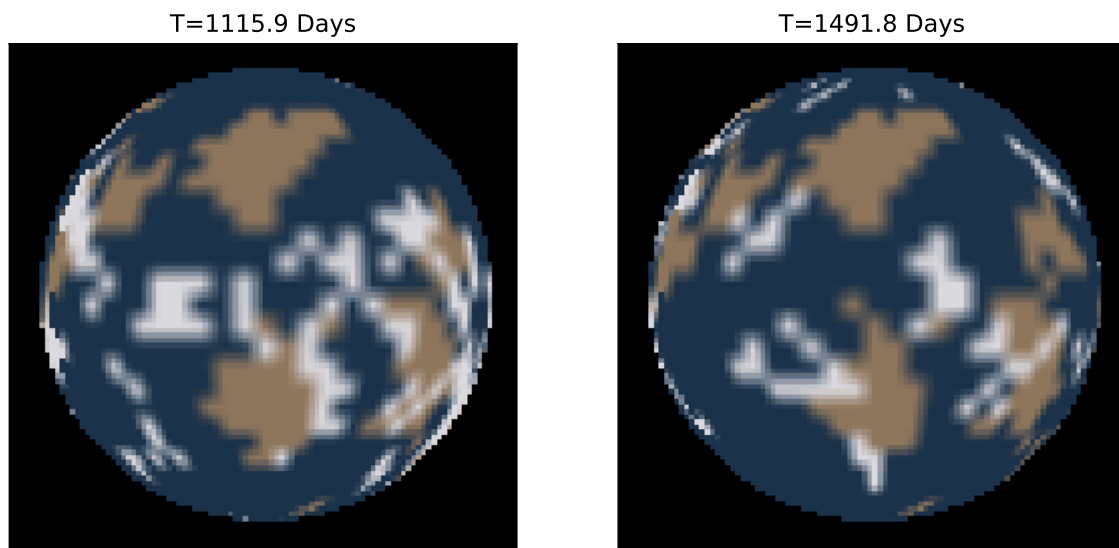


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to be liquid regions of some kind. Other colors present reflect the visible color as best as we are able to measure.