

AST251 Project 3 – Evaluating Claims of Extraterrestrial Messaging gazzola4 Planet 1

Sunday 1st January, 2101

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 lasted a short duration and then stopped. The transmission is shown below:

```
10100110001001000110100101001100101011111010110001011000001100011111100101100000  
10000000101000011000001101101000001100101000000100010000111111000101100001100100  
11101001010111001111010110110110100110100000100010010010111110111000000100101100  
01011111001001101110100011011000101000111101001001000001100111000100101101101000  
11100100000011000000010100001010011101011010110111001010010100011010011000001100  
1110010101110011110101100011110001111111000110100001111001101001111011000011010
```

This signal was first noticed at UTC 2098-09-02/17:30.

Parameters of the candidate planet of origin and its host star

| | |
|----------------------------------|-------|
| Spectral Type | G |
| Stellar Luminosity (Solar Units) | 0.909 |
| Stellar Mass (Solar Masses) | 0.977 |
| Distance to Star (lightyears) | 937.3 |
| Planet Mass (Earth masses) | 4.4 |
| Atmospheric Pressure (atm) | 20.2 |

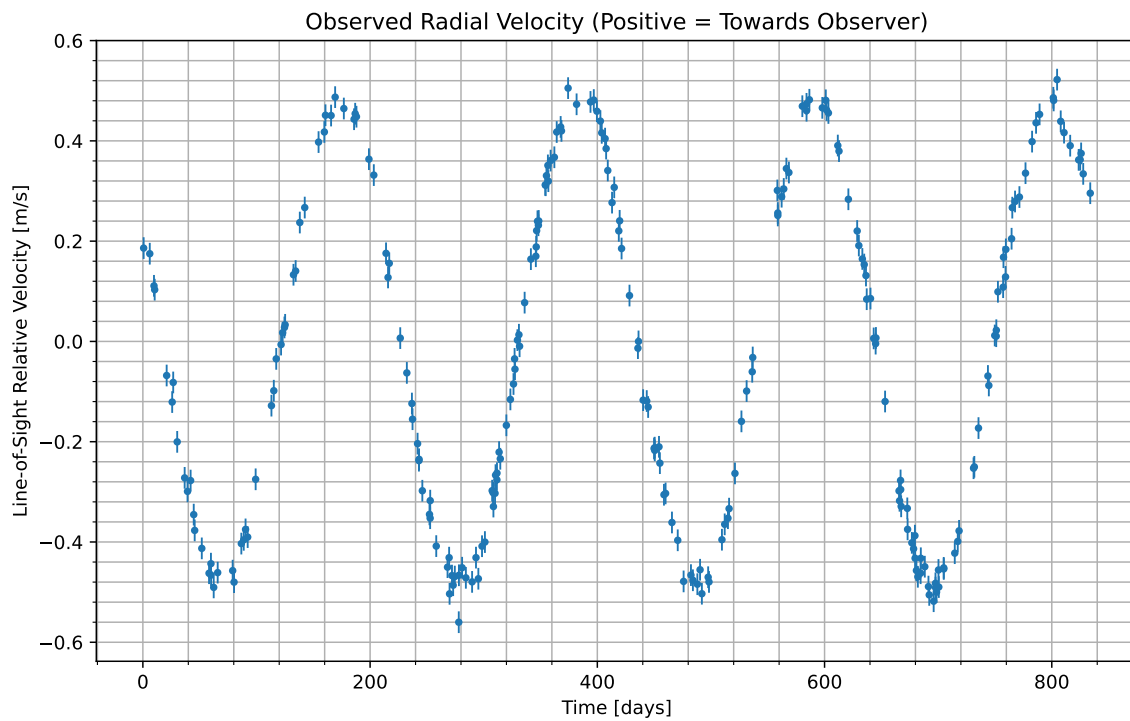


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2098-09-04/18:57. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

| Molecule | Concentration |
|----------|---------------|
| N_2 | 18.8 |
| CO_2 | 65.6 |
| H_2O | 15.5 |

Gas Abundance (percent by volume)

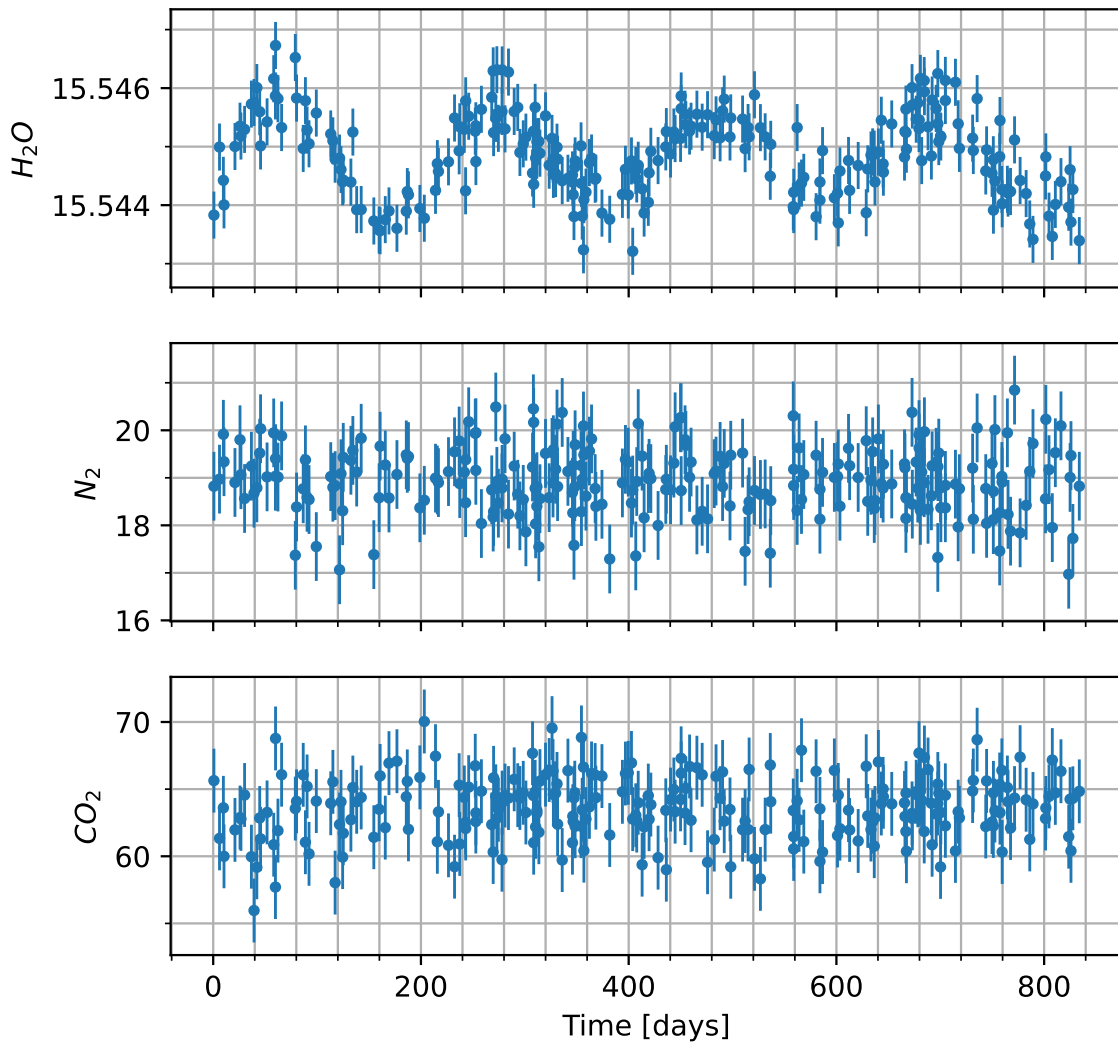


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

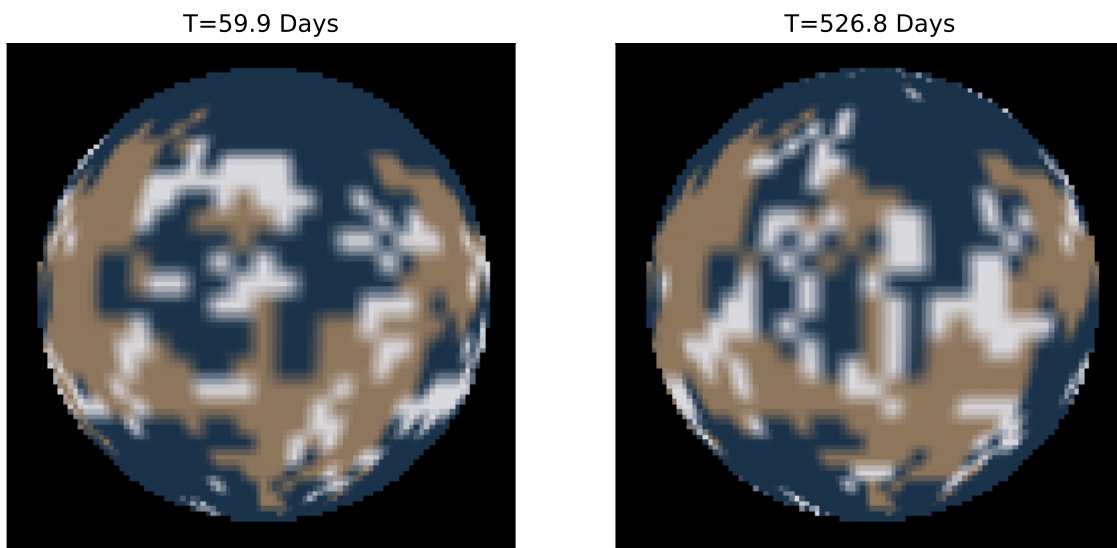


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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