

AST251 Project 3 – Evaluating Claims of Extraterrestrial Messaging

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Planet 2

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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 radio 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:

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0101101011010000000001001101000000100111001100101110111101101100
111111110101000110111010111101010111110110111010110010101111011
10110001110100011001011111100100010111100111111100011110011111110
0001101100111110110100110110000011111111110011010100001110100000
00010010110011010000000111100001100001111001011010000111000101111
00001100101000001110110010110011000001110011101110110110111110100
1110110001011100001001111000001111110110111010111010110000010100
11000000001001011100110100111110011100011001101001110001101111011
11100110111000000000001101011011100111100100000010100001100011100
0001100110101101010110010010101111110001111111011101100010011110
```

This signal was first noticed at UTC 2066-09-13/01:07.

Parameters of the candidate planet of origin and its host star

| | |
|----------------------------------|------|
| Spectral Type | G |
| Stellar Luminosity (Solar Units) | 1.22 |
| Stellar Mass (Solar Masses) | 1.05 |
| Distance to Star (lightyears) | 88.4 |
| Planet Mass (Earth masses) | 0.7 |
| Atmospheric Pressure (atm) | 15.5 |

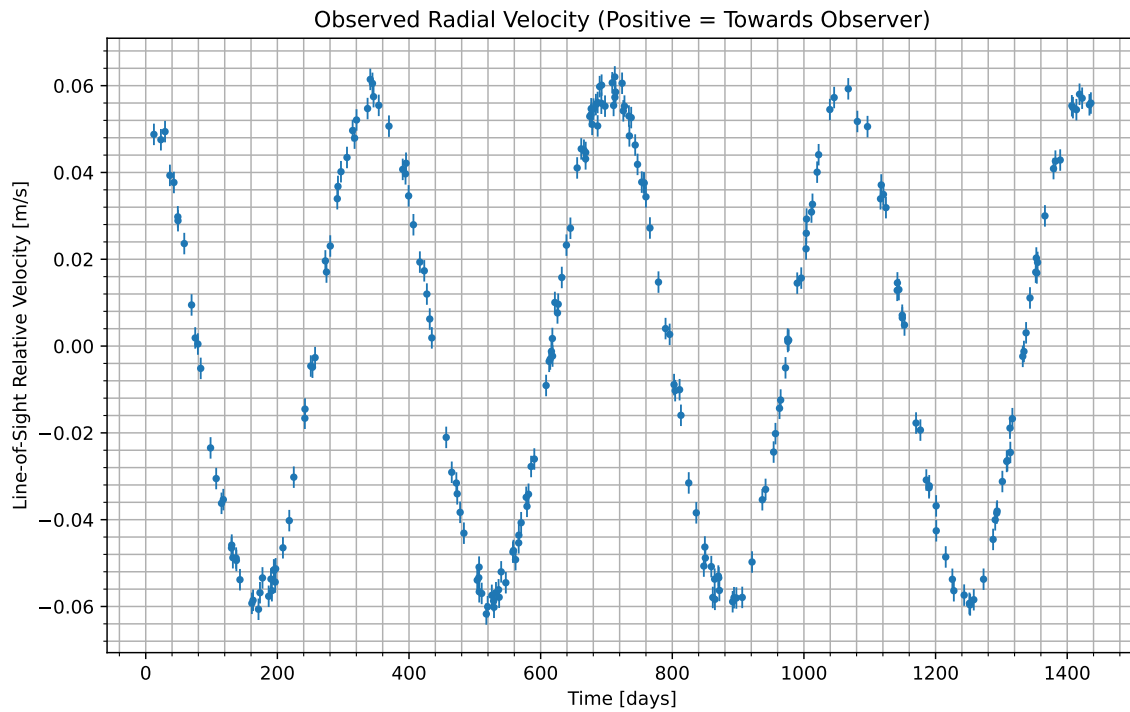


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2066-09-15/12:17. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

| Molecule | Concentration |
|----------|---------------|
| N_2 | 23.4 |
| CO_2 | 66.6 |
| H_2O | 9.94 |

Gas Abundance (percent by volume)

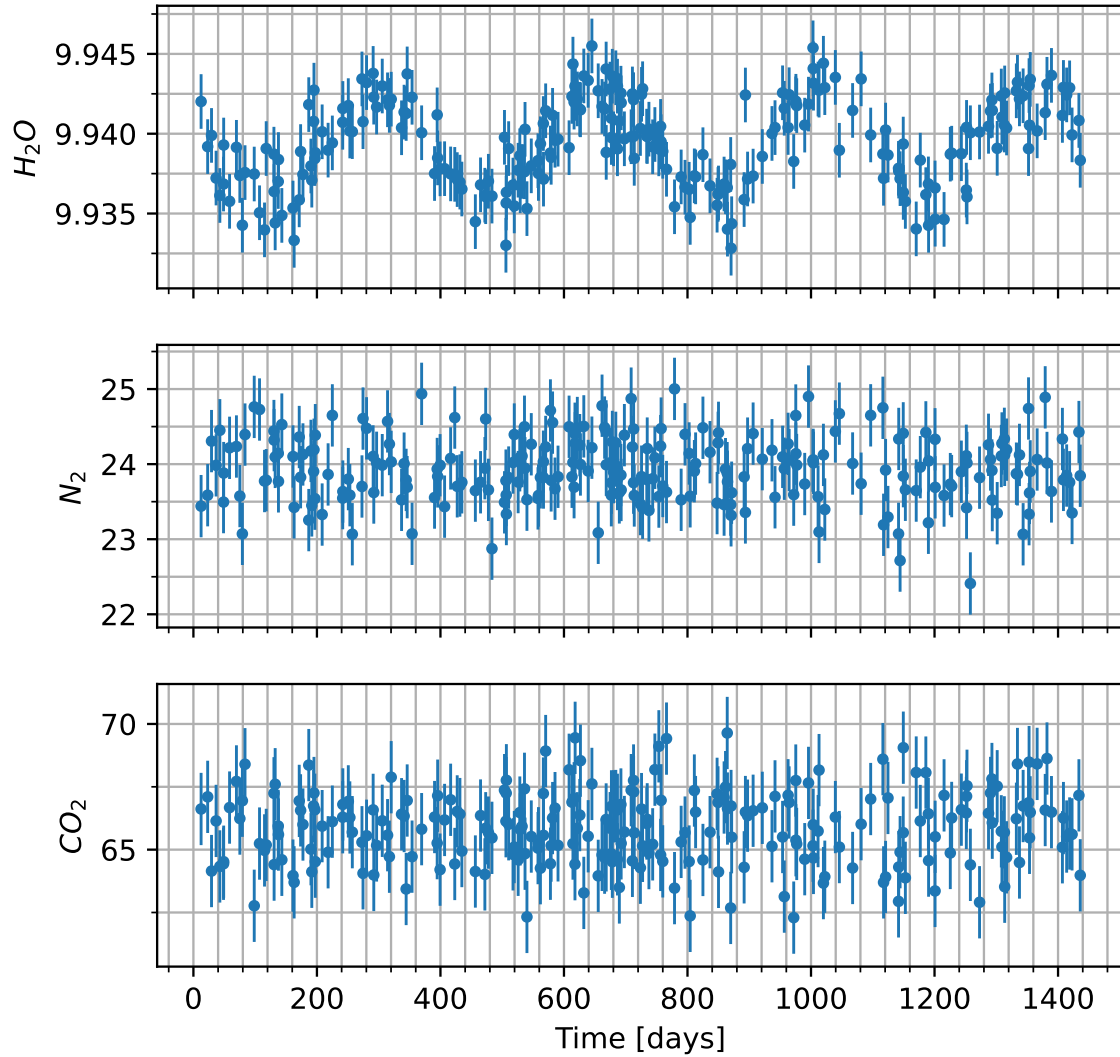


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

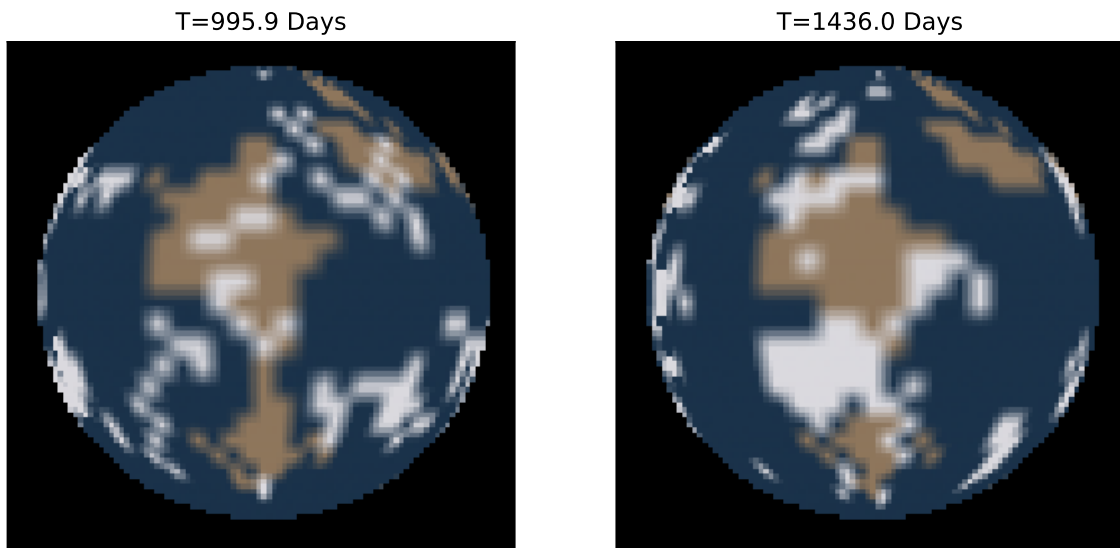


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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