

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

Sunday 23rd July, 2073

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 narrowband 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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0011010001000001011101011101001001011110000001010110100100100011111011  
0001101100000000111011011011011011110101110010100110111110101000101111  
011001111000110011110101100100010000110111110011011100100000000011011  
0100101101100100010101000100101110000001110010011110111010010011011101  
1101010000111010010011110110111111101010101011100011010110110100110010  
111101100110001000111010110101010001011111111000010111001111101010001  
0000110010111110001100110101000001011100011010011011011010010100100100  
0001010010010100100010101001000011001100100101100011010101110000100100  
0100010101000000100110111001101000010001010001001100001011101100110011  
1111001101000111100000101010000111111001000101011100111011100000011110
```

This signal was first noticed at UTC 2073-05-05/23:42.

Parameters of the candidate planet of origin and its host star

| | |
|----------------------------------|--------|
| Spectral Type | M |
| Stellar Luminosity (Solar Units) | 0.0139 |
| Stellar Mass (Solar Masses) | 0.325 |
| Distance to Star (lightyears) | 1229.8 |
| Planet Mass (Earth masses) | 0.7 |
| Atmospheric Pressure (atm) | 12.0 |

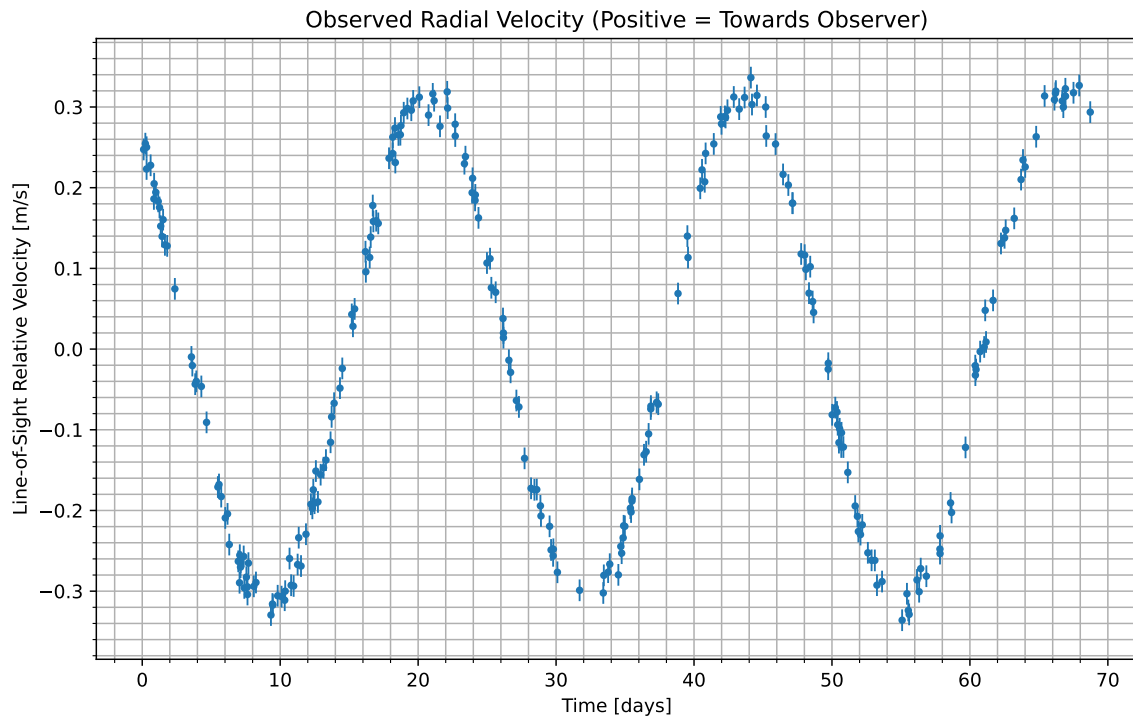


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2073-05-07/21:40. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

| Molecule | Concentration |
|----------|---------------|
| N_2 | 9.16 |
| CO_2 | 63.3 |
| H_2O | 27.5 |

Gas Abundance (percent by volume)

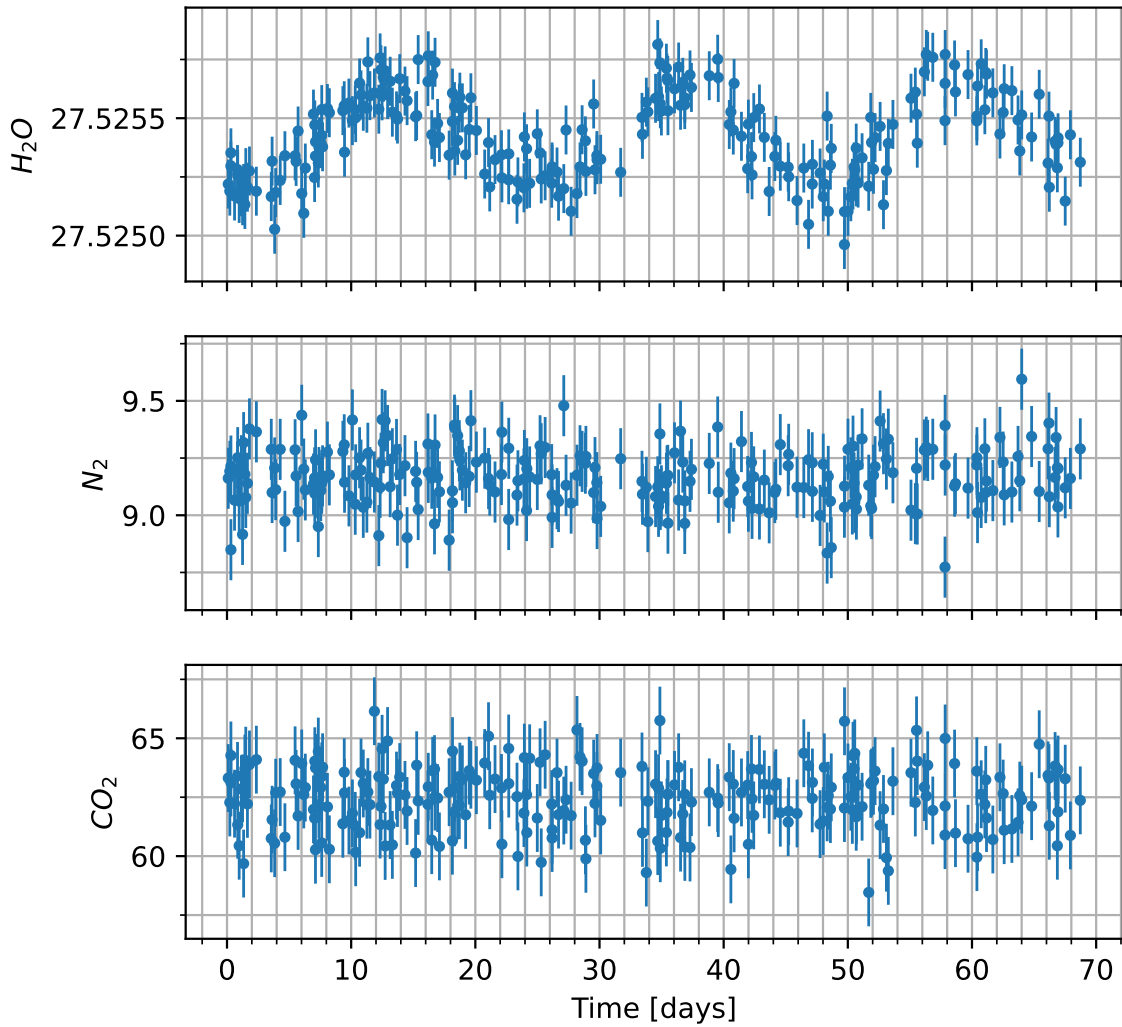


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

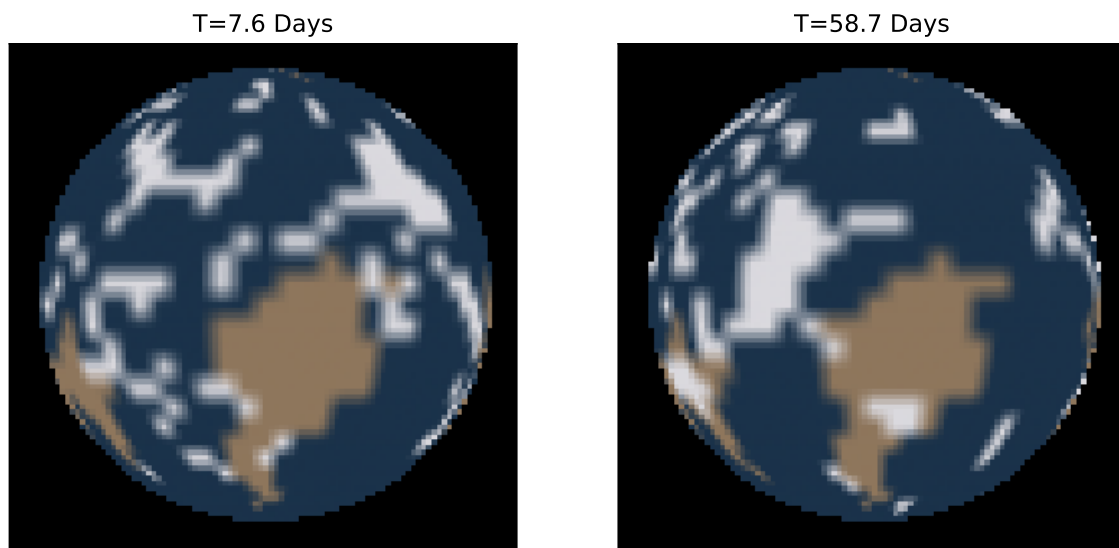


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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