

AST251 Project 3 – Evaluating Claims of Extraterrestrial Messaging ahnuicha Planet 2

Monday 29th July, 2086

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 optical 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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111110001101110100011110110000011110010011101011110010101000
010001111011011101100000000001010011011001000010001000001000
010111001111000011011000001110001000101010010100111000111101
110101111000111101000011111000010010011110100101110000110101
010100101100011101011110101110001000010001100101000101110000
11110010010010101111100101111001000111110001000000100011100
011010011000011010101000110110101111010000000011000101110001
110000101000110001010011011101001100110111011011101111010101
100100000111110001001010111001001010011001001111000111100110
```

This signal was first noticed at UTC 2086-05-23/19:20.

Parameters of the candidate planet of origin and its host star

Spectral Type	M
Stellar Luminosity (Solar Units)	0.000706
Stellar Mass (Solar Masses)	0.128
Distance to Star (lightyears)	272.4
Planet Mass (Earth masses)	0.8
Atmospheric Pressure (atm)	1.1

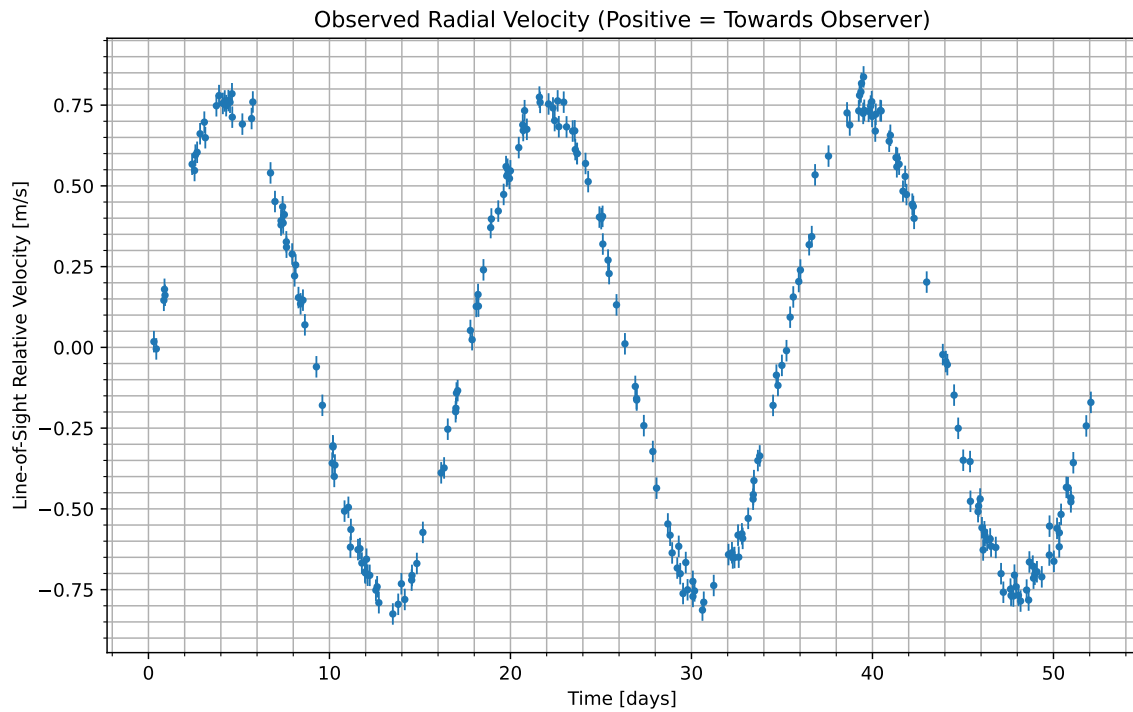


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2086-05-23/22:43. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

Molecule	Concentration
N_2	31
CO_2	56.5
H_2O	12.5

Gas Abundance (percent by volume)

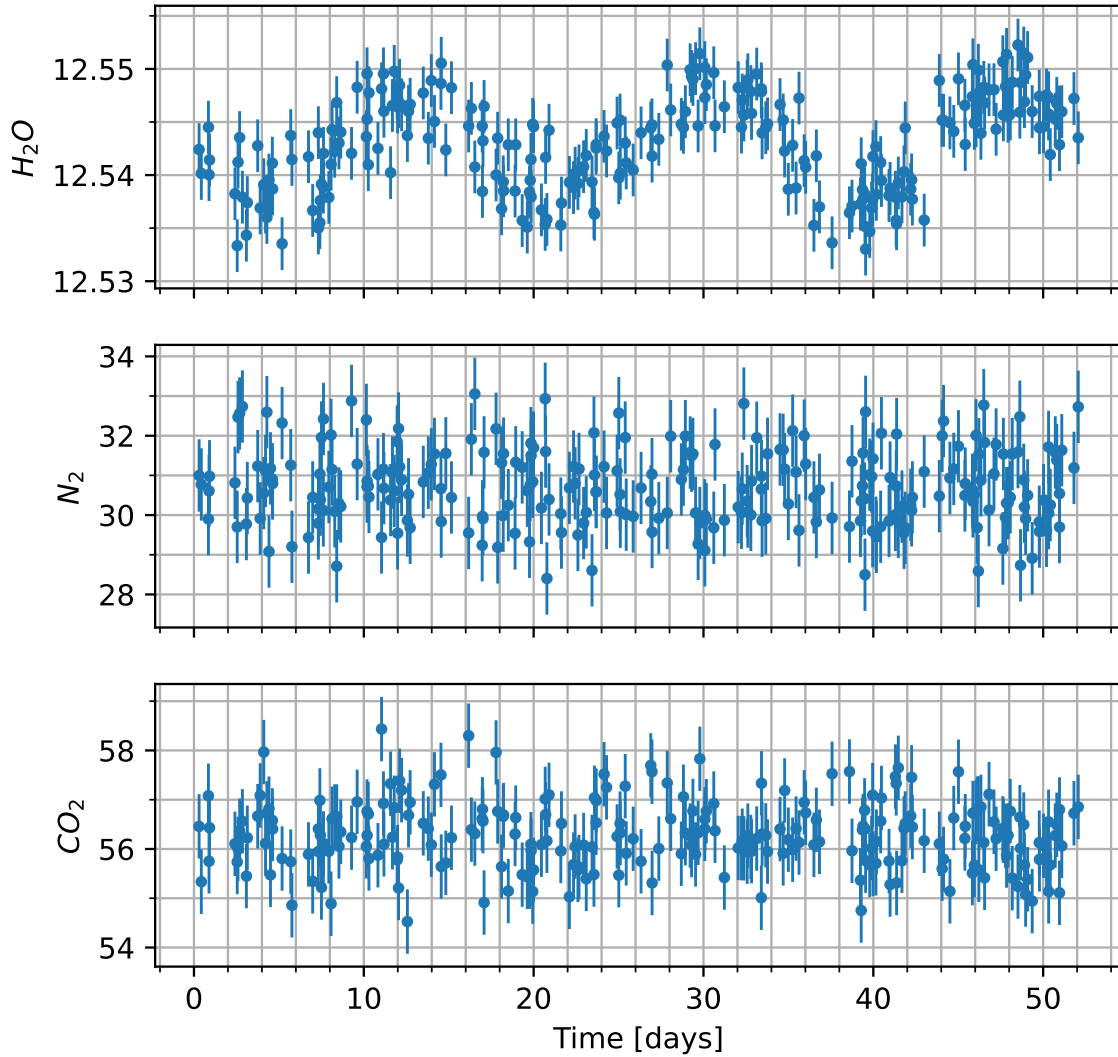


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

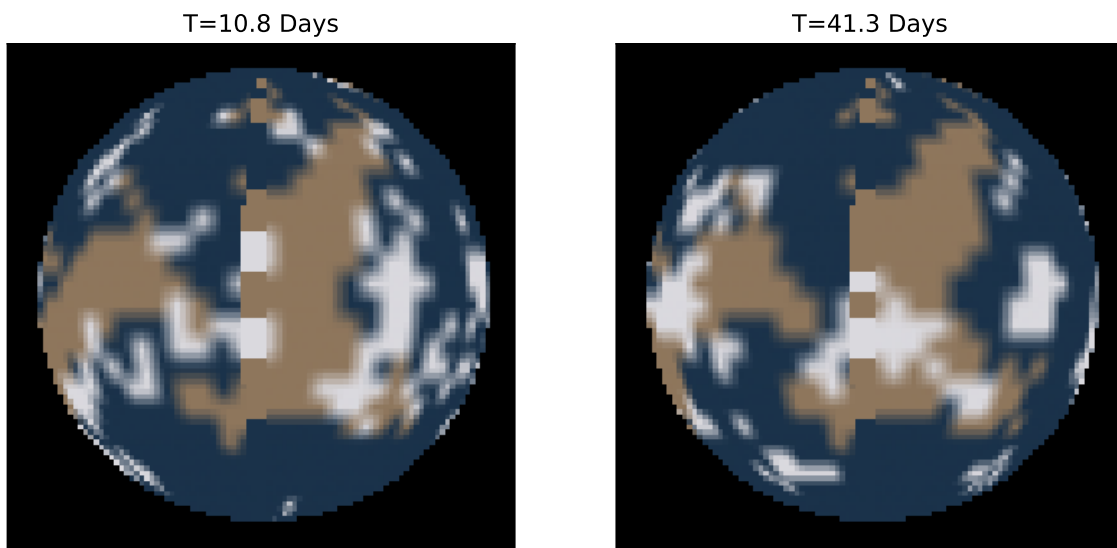


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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