

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 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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01101001100001100001011101110110011000100111110101010101000
10101011100111100100000010110101011110000011000111001110011
11100010001110101101100010100011111101010101001101101011010
1111100110011100001001110111111010110101111000101011011001
00111101100001110011111001100101100010001100001110000011111
00010001110011011010100101000100100111011110100010111111101
01010001111110101010111100001001000000001000110100110101011
10100111100101011001100010111010001111101101000111000111000
01000100011011100100100111001011101000000010010001110110110
```

This signal was first noticed at UTC 2074-08-20/09:01.

Parameters of the candidate planet of origin and its host star

Spectral Type	M
Stellar Luminosity (Solar Units)	0.00478
Stellar Mass (Solar Masses)	0.233
Distance to Star (lightyears)	73.9
Planet Mass (Earth masses)	0.4
Atmospheric Pressure (atm)	3.2

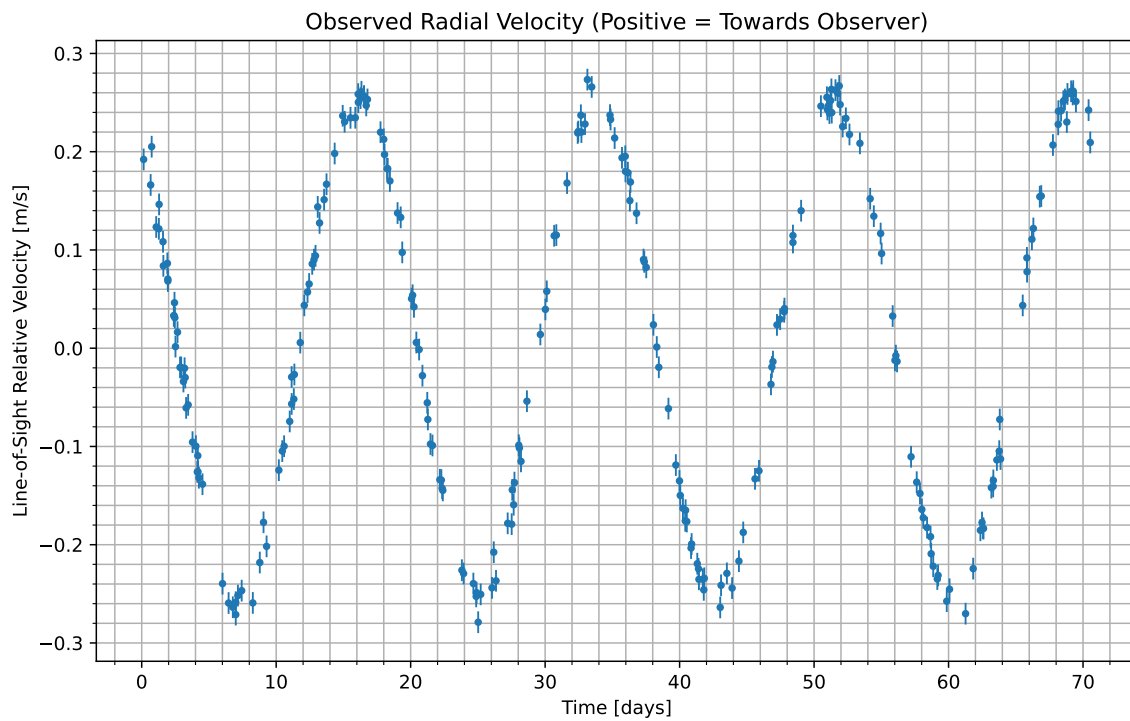


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2074-08-22/03:45. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

Molecule	Concentration
N_2	8.01
CO_2	58.2
H_2O	33.8

Gas Abundance (percent by volume)

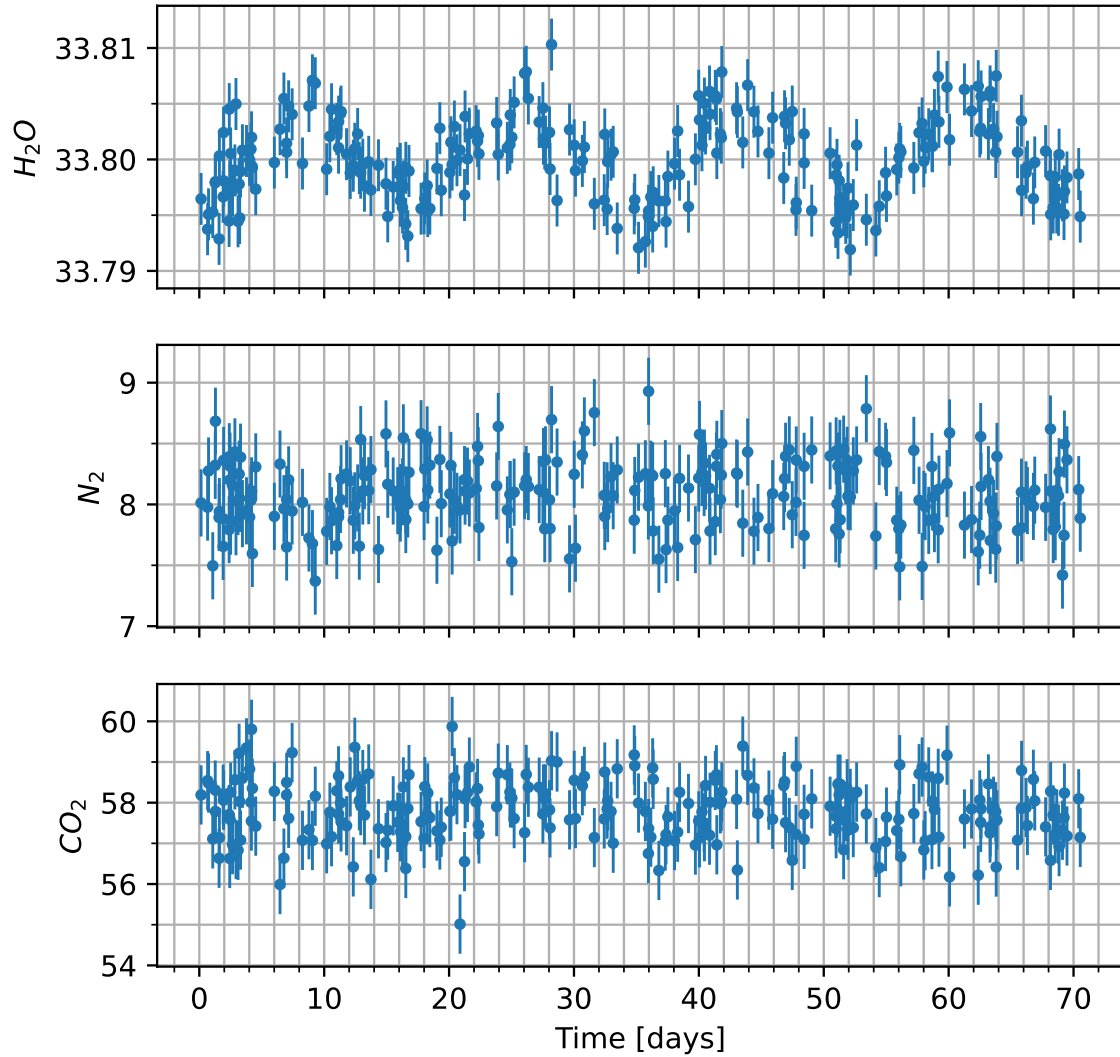


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

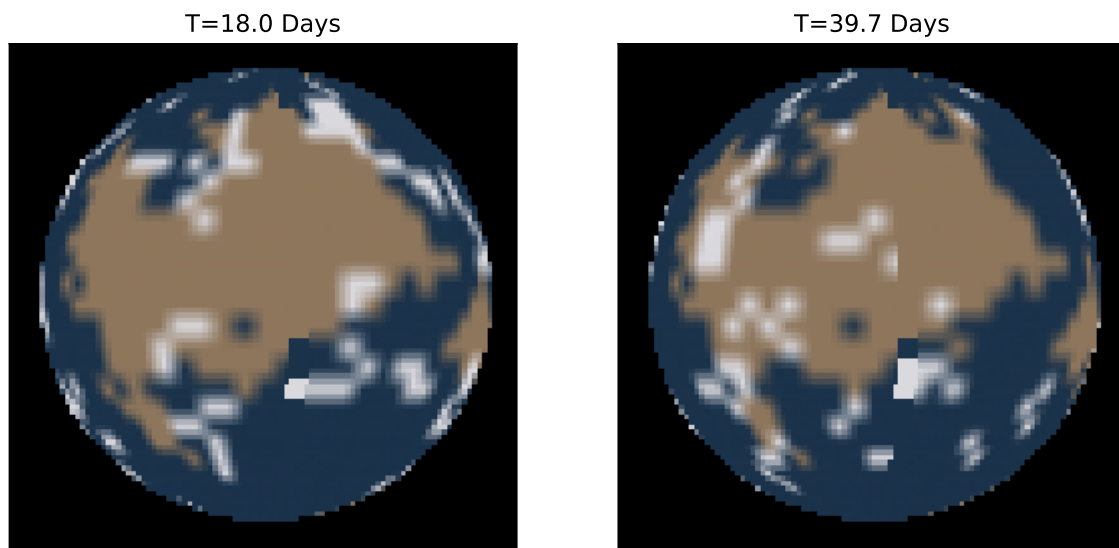


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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