

AST251 Project 3 – Evaluating Claims of Extraterrestrial Messaging

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Planet 1

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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 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 is continuous and does not repeat itself frequently. An excerpt of the transmission is shown below:

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011010001110001001111111010000100000111010111001010111001010111110110001
011000011011011100110101101101110111001100101101010110011011110101001000
001100110001100010000101101000101100110001111011100000011011110111101001
010101010101010001001101000011111110011101010000001100111000110000001100
010011010100000110111000001001111000010000011111110011101001010100100010
111011010111101001001010111000001011010100101100100101001110001100011001
0011001110000001110000011101101101010110010110010101110101101001010010
101000001000001011011001011100010010011101011000110001100111111100110001
```

This signal was first noticed at UTC 2084-04-05/01:42.

Parameters of the candidate planet of origin and its host star

Spectral Type	F
Stellar Luminosity (Solar Units)	2.37
Stellar Mass (Solar Masses)	1.24
Distance to Star (lightyears)	41.2
Planet Mass (Earth masses)	2.6
Atmospheric Pressure (atm)	13.4

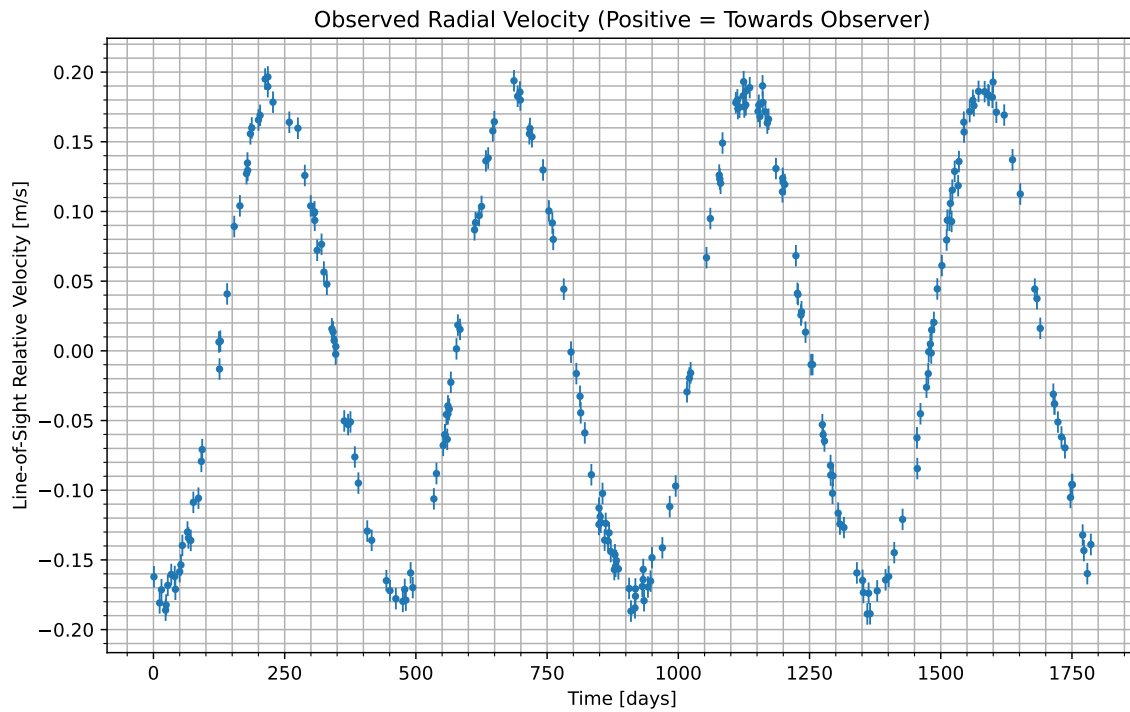


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2084-04-06/04:03. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

Molecule	Concentration
N_2	39.6
CO_2	44.5
H_2O	15.9

Gas Abundance (percent by volume)

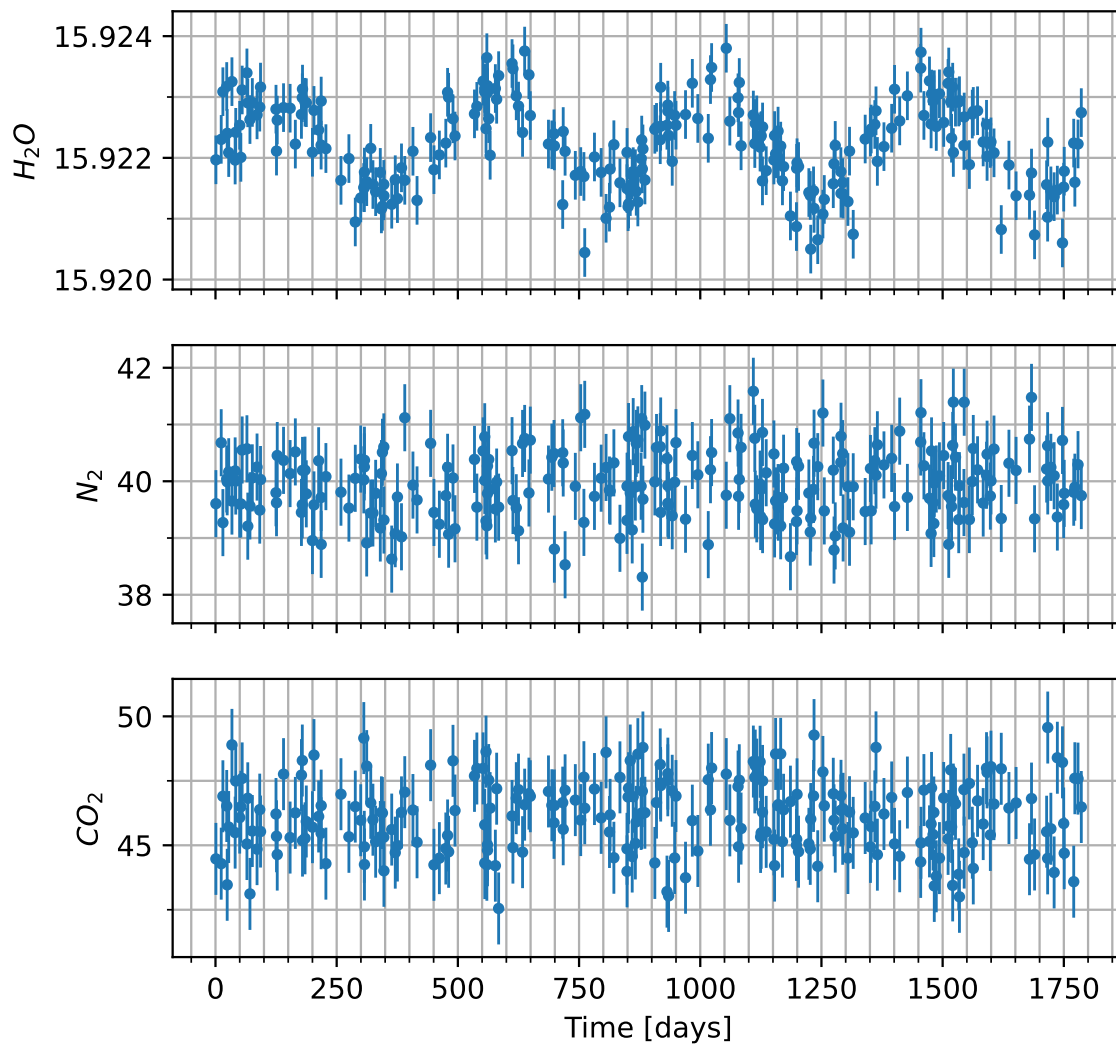


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

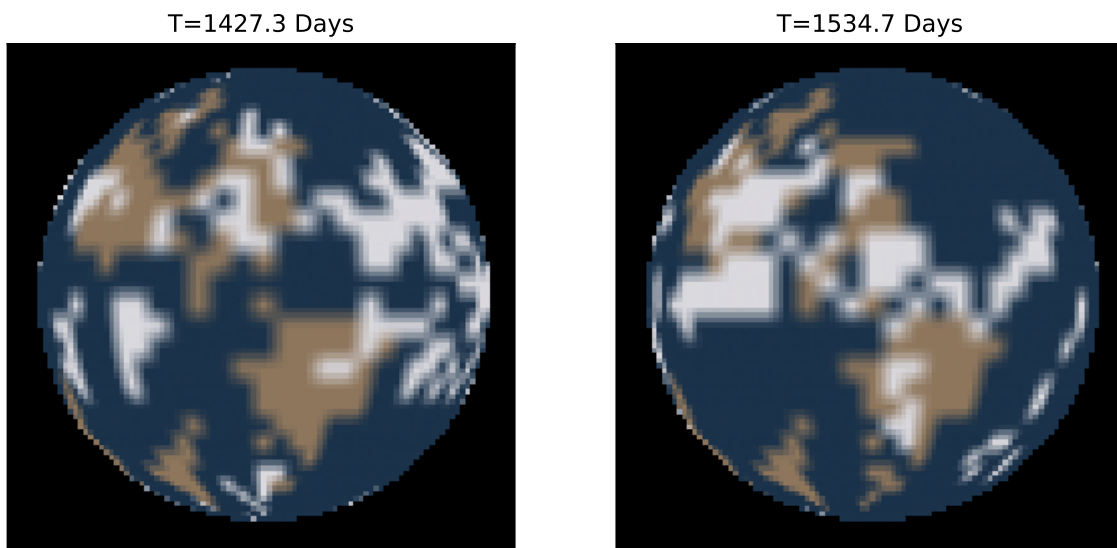


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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