

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 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 lasted a short duration and then stopped. The transmission is shown below:

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01111110100010100001001110100101100000100111001100100010100000001
10001001001100000111000111000010100001000010111101110000000000001
10010001001010101000111100010011100111111011100000100101110000011
00000010011010010000110101000110001010011101010101010110111000101
100101000111100010000111110100101110111111100111101111001111101
10001011110110100001000000110100101000101011110110011000100100010
00110100011001000101100111101011010101010110100000101001111010001
1000001010010001001101000101100101001110010001011101100111111000
01101110100010001011110001101111111001001001100110001011010001101
```

This signal was first noticed at UTC 2100-09-07/20:42.

Parameters of the candidate planet of origin and its host star

Spectral Type	M
Stellar Luminosity (Solar Units)	0.00203
Stellar Mass (Solar Masses)	0.178
Distance to Star (lightyears)	18.1
Planet Mass (Earth masses)	1.1
Atmospheric Pressure (atm)	4.3

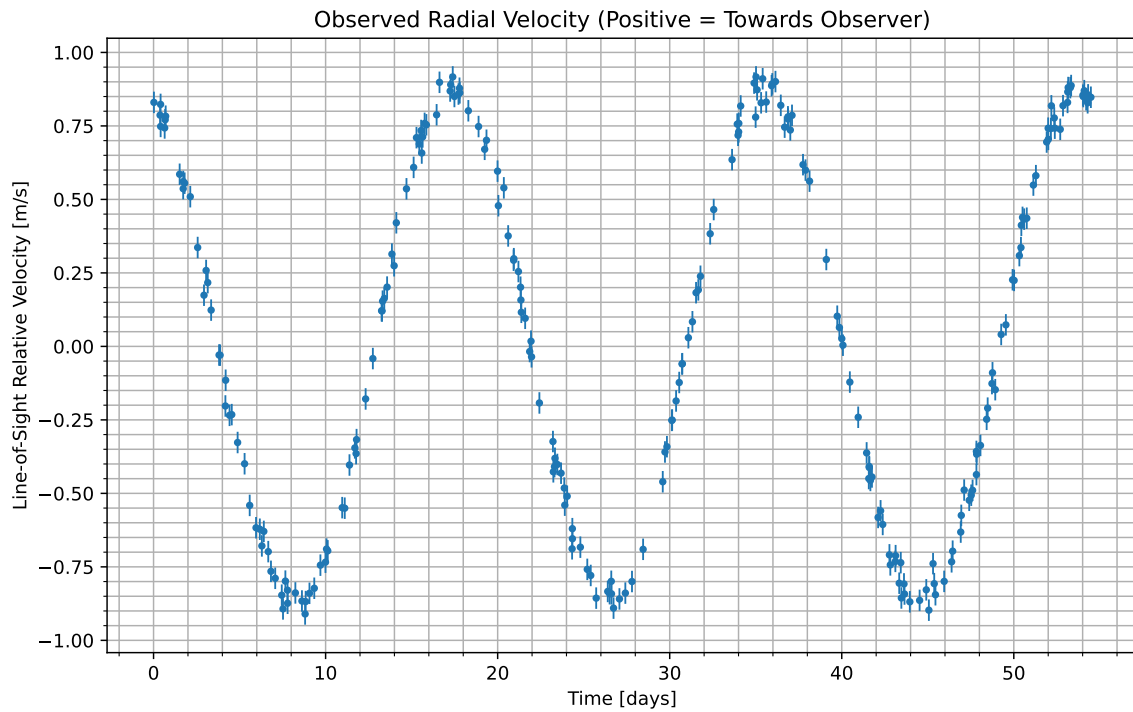


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2100-09-08/01:18. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

Molecule	Concentration
N_2	50.8
CO_2	29.1
H_2O	20

Gas Abundance (percent by volume)

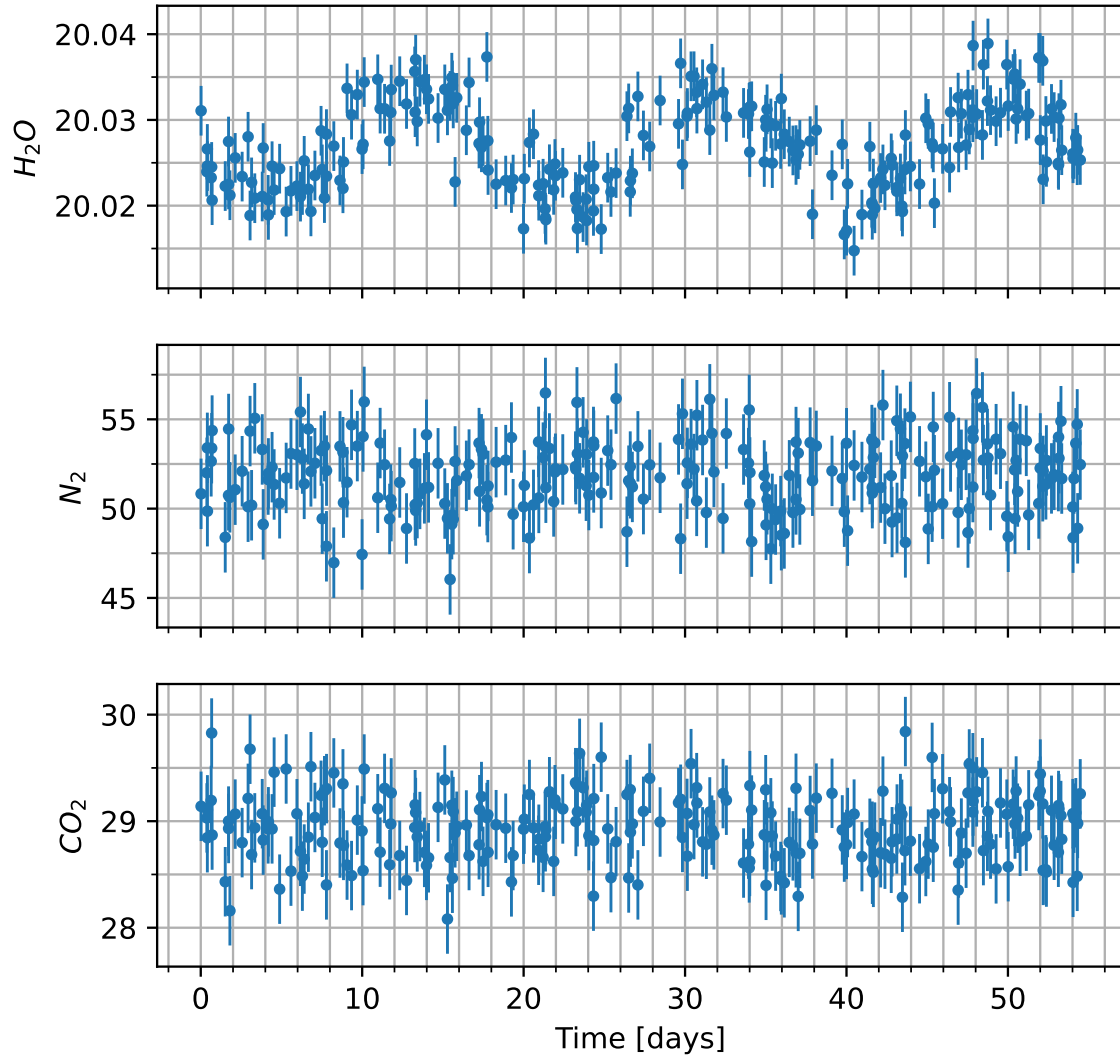


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

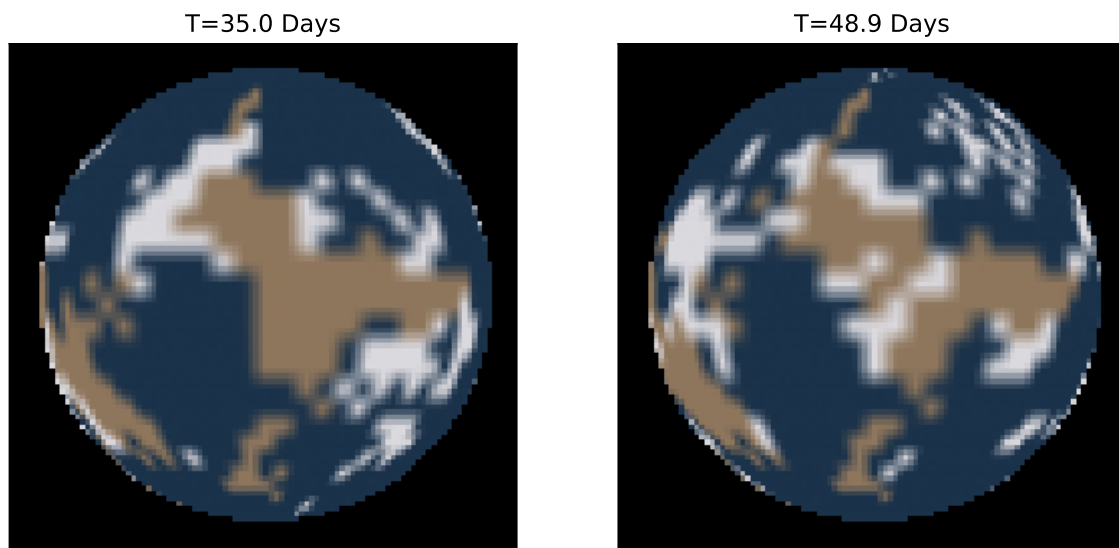


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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