

AST251 Project 3 – Evaluating Claims of Extraterrestrial Messaging

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Planet 3

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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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00011101000011111001110111110110101100001100101000101000100010101110110
01011001110100001000100101100111010111111011110000000011010111111010001
01100010110000101010110100110001101100000001000011010000110010011110011
1110010010011101001100011011110000000101111101100001011101010101001111
01001111100000110011001111001110100010001101011100100111000100111111011
0101001000101101011110100100010000100111100111100011111101010110110001
01100001101110011100110111000110000110100000100110000101100001100000100
01000101011000100101011010100110100101110110100000110110000011110100010
10110000111011010011101011000100011011111100000000111110110100000110111
```

This signal was first noticed at UTC 2079-03-04/13:55.

Parameters of the candidate planet of origin and its host star

Spectral Type	M
Stellar Luminosity (Solar Units)	0.000876
Stellar Mass (Solar Masses)	0.137
Distance to Star (lightyears)	518.1
Planet Mass (Earth masses)	4.4
Atmospheric Pressure (atm)	6.4

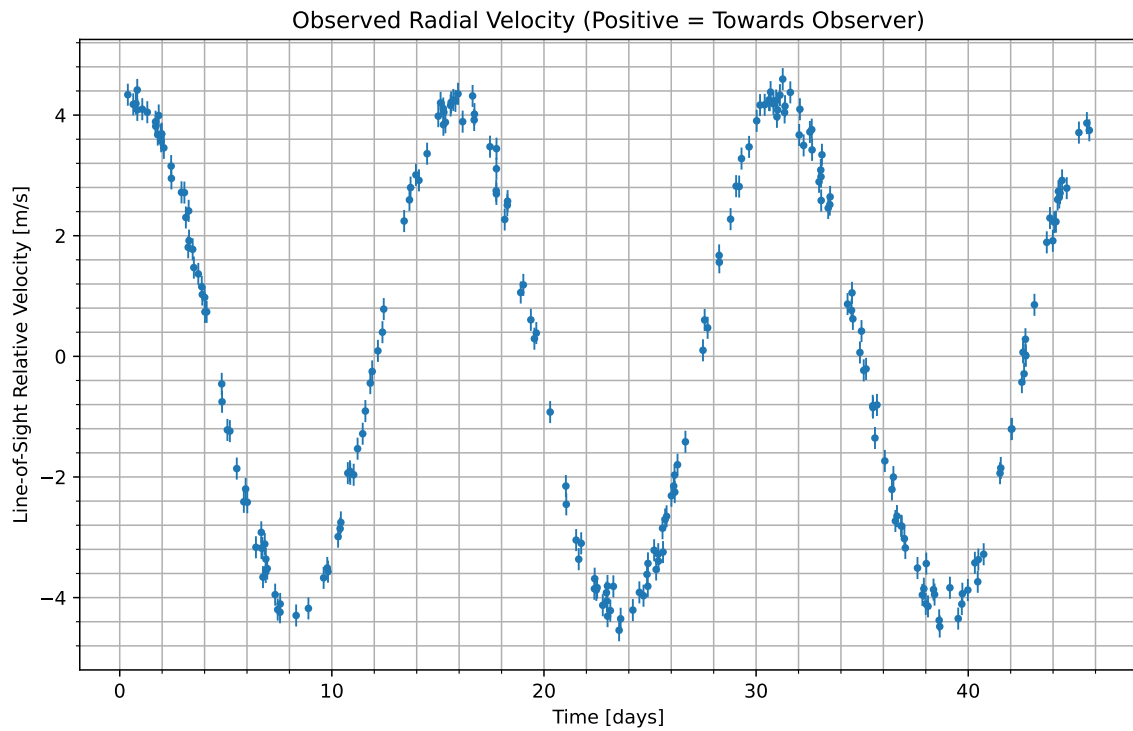


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2079-03-05/13:59. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

Molecule	Concentration
N_2	50.3
CO_2	35.7
H_2O	14

Gas Abundance (percent by volume)

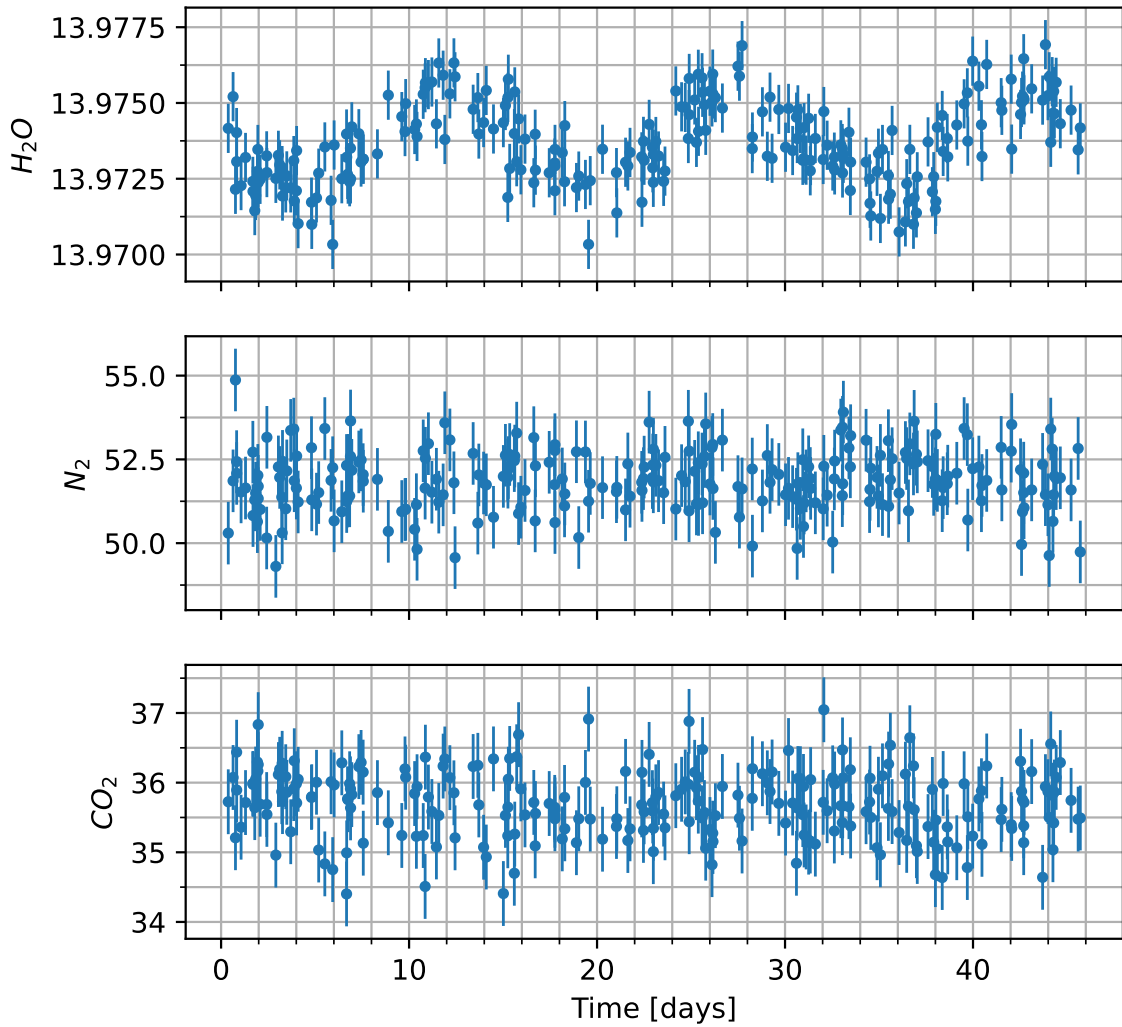


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

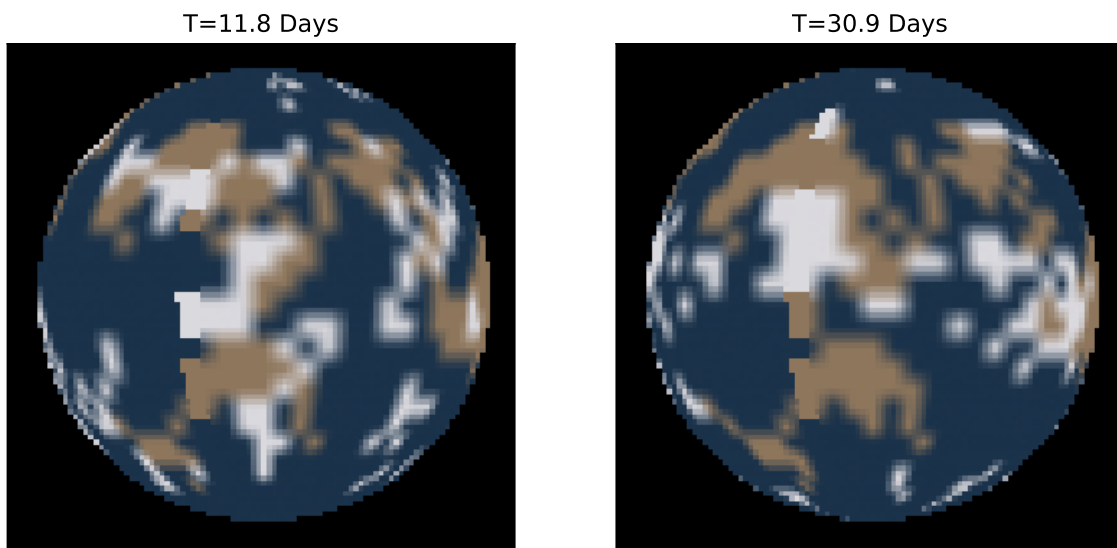


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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