

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

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000000010101011101011010011010000011111110111001010101001110
110100000110010000100011001111000000010000111010011101011110
011011011111111101011001110111000010110100101010100111000111
110001101111010110100101100011111101101000100110001100110100
010001111010000100010110101111101000111000100110101001100011
110100001111011011011001010100000010011110001001110010110001
111101000010011000001001110101010000000010001010110001000101
100111110100101010100100011100101011101010010110011111111001
```

This signal was first noticed at UTC 2094-03-04/07:58.

Parameters of the candidate planet of origin and its host star

Spectral Type	M
Stellar Luminosity (Solar Units)	0.0238
Stellar Mass (Solar Masses)	0.384
Distance to Star (lightyears)	136.8
Planet Mass (Earth masses)	1.8
Atmospheric Pressure (atm)	0.9

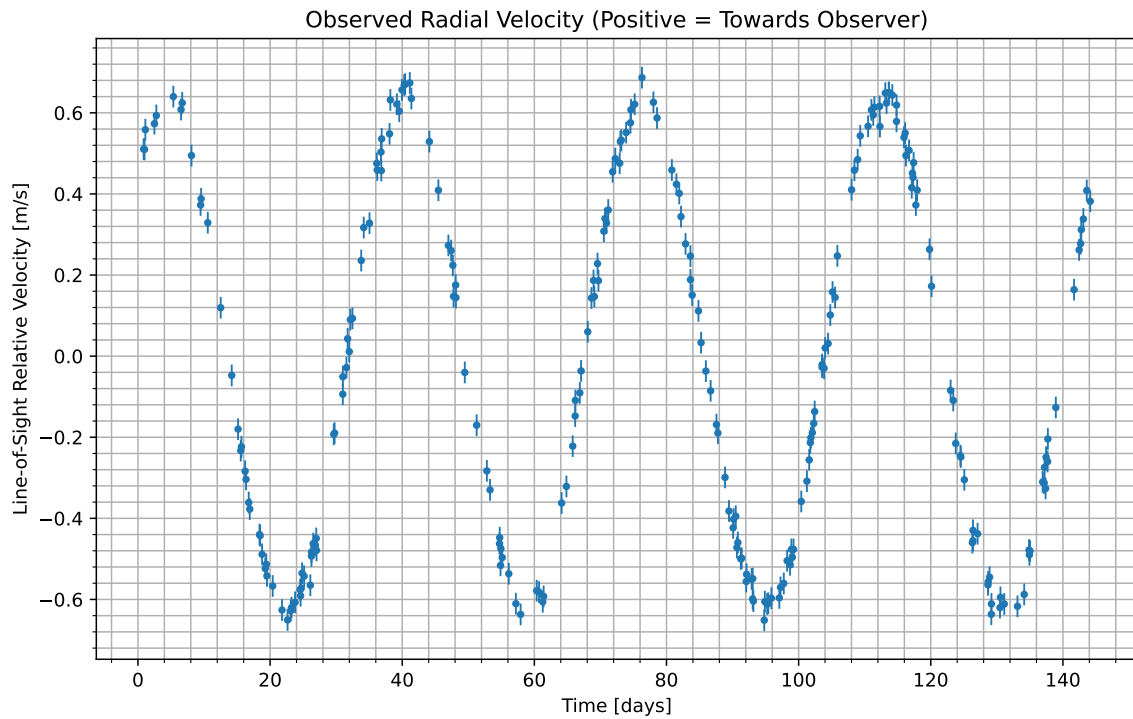


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2094-03-07/01:50. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

Molecule	Concentration
N_2	36.6
CO_2	48.3
H_2O	15

Gas Abundance (percent by volume)

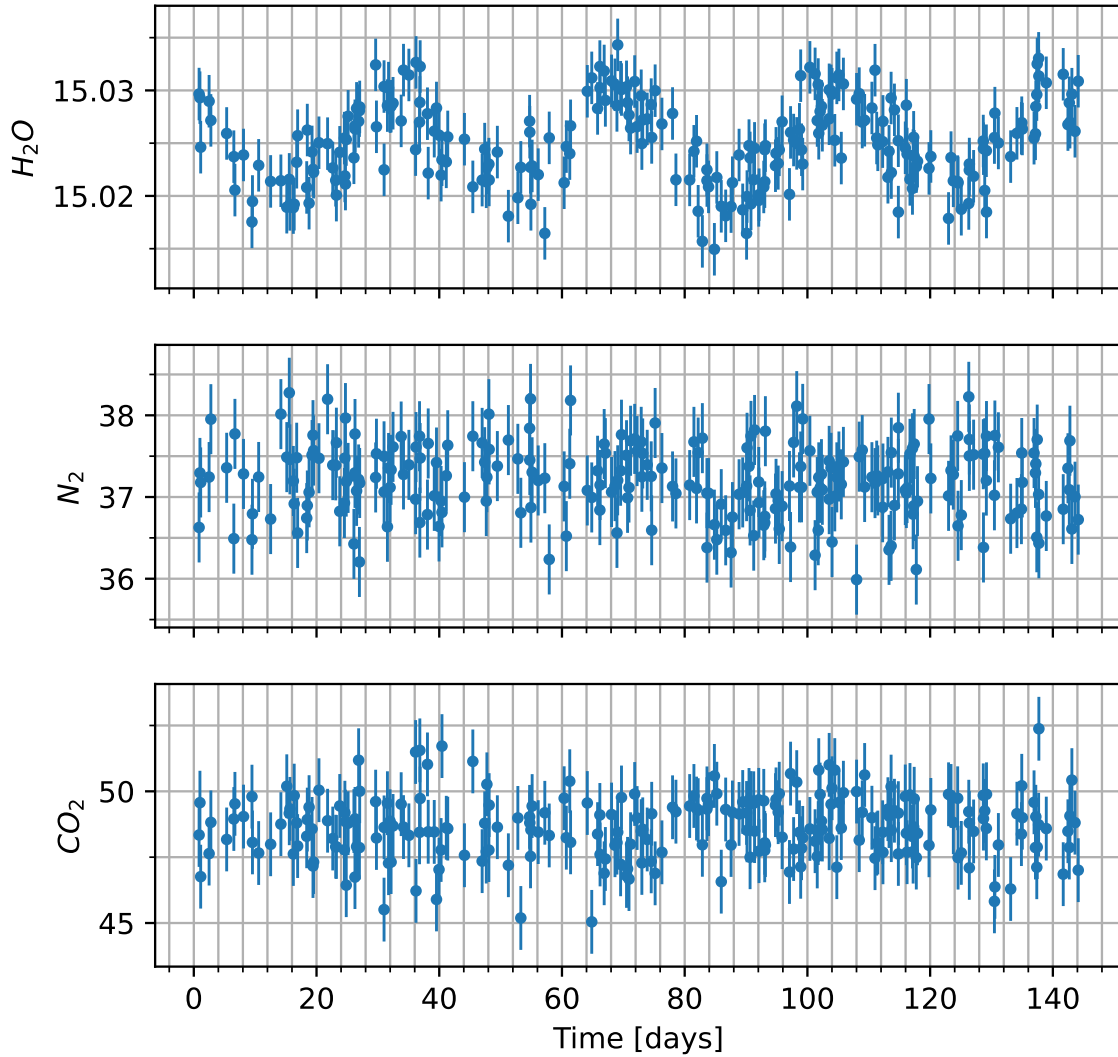


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

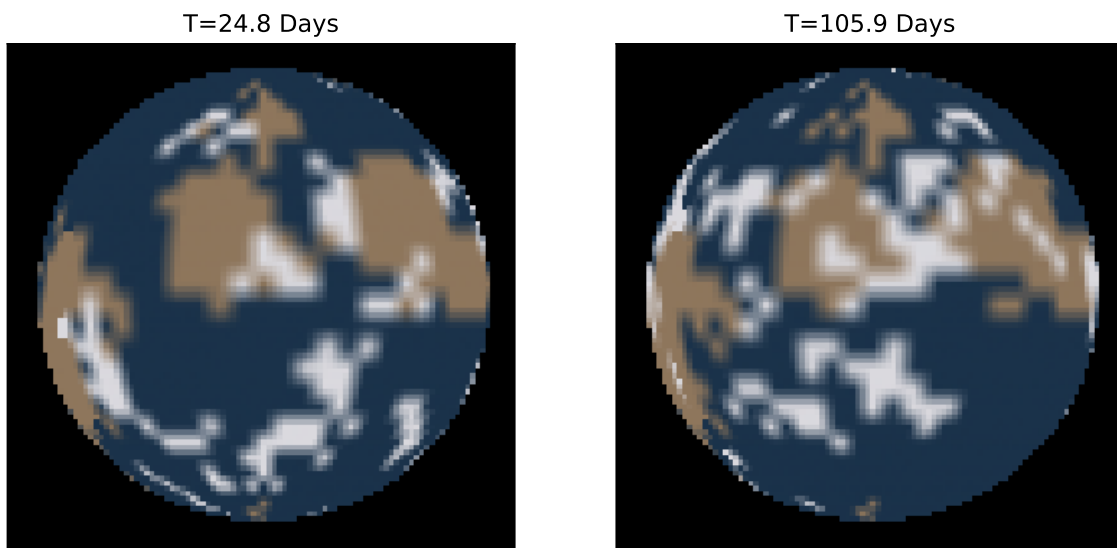


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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