

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 radio 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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100111001101001111010111011000101100111101001110110001110011110110111101001
001001101101101100010110010111000001010011010101111011011001010110001101110
1011111111111000011101100010111000011011011010001101001011111011111111000
0101000000111000010000001000000011000010000001000100011111010100111111011
10010001010010000001110001001100110001101100110111011000000101000100111110
101010110000110001011001011001101101100011101001110000001000000111011100111
00011010110001001111011011111001011001111010101100100000011000010011001000
11111101011001001100110000010110011110111111101011000111001110011110101001
1011100011111110110011110100110010000001100010101111000100011100011100111
```

This signal was first noticed at UTC 2092-04-24/19:35.

Parameters of the candidate planet of origin and its host star

Spectral Type	K
Stellar Luminosity (Solar Units)	0.0738
Stellar Mass (Solar Masses)	0.521
Distance to Star (lightyears)	348.1
Planet Mass (Earth masses)	0.8
Atmospheric Pressure (atm)	5.6

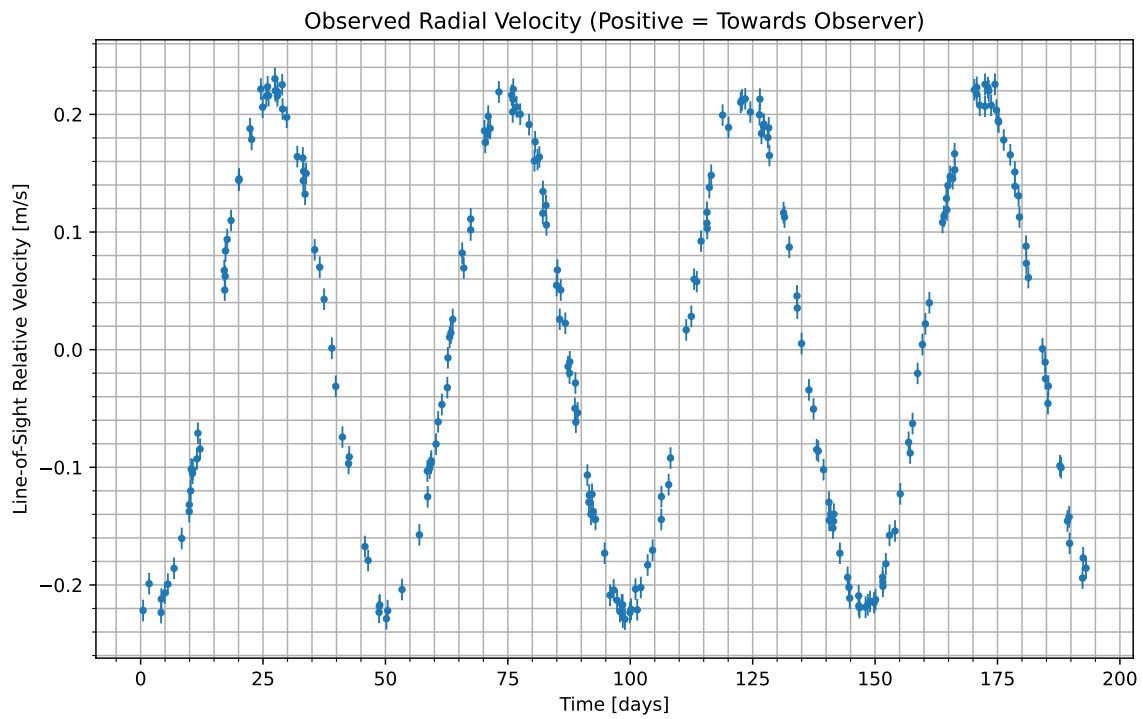


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2092-04-25/19:09. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

Molecule	Concentration
N_2	52
CO_2	23.5
H_2O	24.5

Gas Abundance (percent by volume)

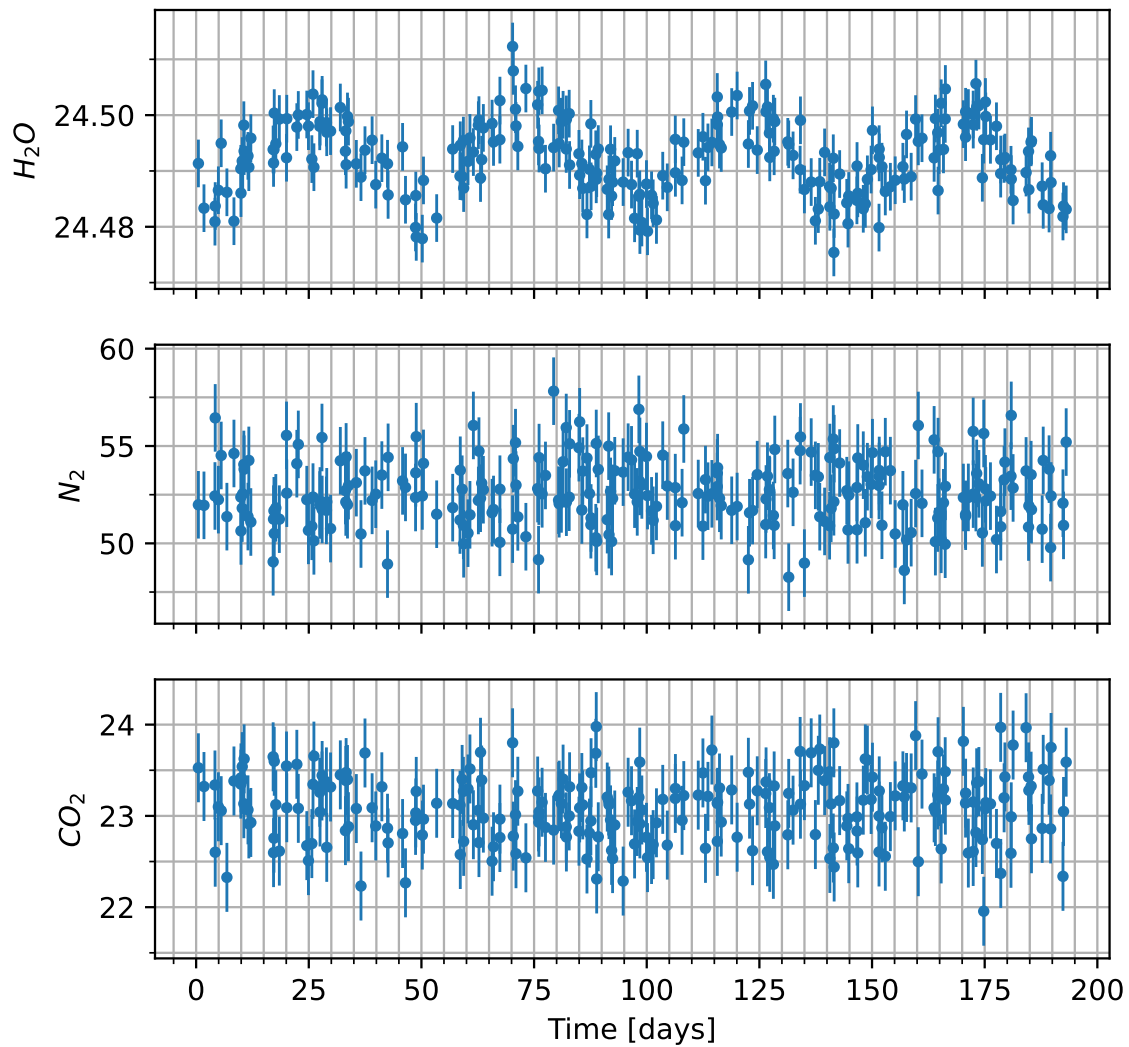


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

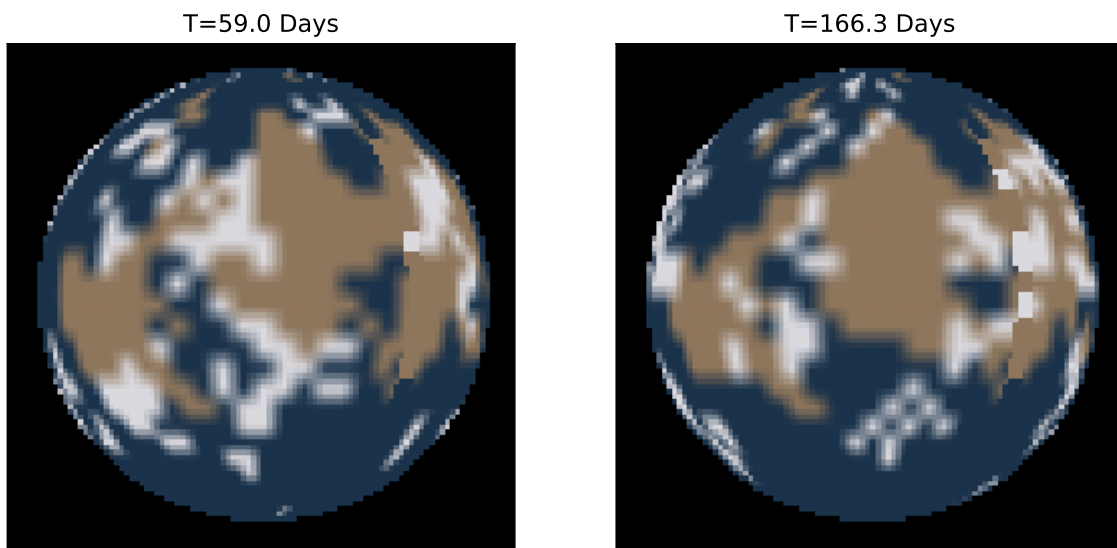


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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