

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

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01011011110010011111001010100001110111101111110001001111111011101100010
01100010101010000101101011101011110101111100010011010110110000100111100
111010000111011101100000111010001101100101101011000000100110010101010011
101100000111100011101101111001101001101100001100001010000101010000001011
000111111100001011111101000111101011011111100011100101111100101001101101
100100010110010011100000111100101010000100010000001000110101100000111001
001010101111110011000101011011011011011111101010011001111001001010010101
100001100010100110001101111110100100010000001101000011010101100001010011
1100110101101111000000000011101110111111011000101010111100001111000000011
```

This signal was first noticed at UTC 2097-12-26/01:42.

Parameters of the candidate planet of origin and its host star

Spectral Type	G
Stellar Luminosity (Solar Units)	0.772
Stellar Mass (Solar Masses)	0.937
Distance to Star (lightyears)	22.1
Planet Mass (Earth masses)	2.4
Atmospheric Pressure (atm)	6.3

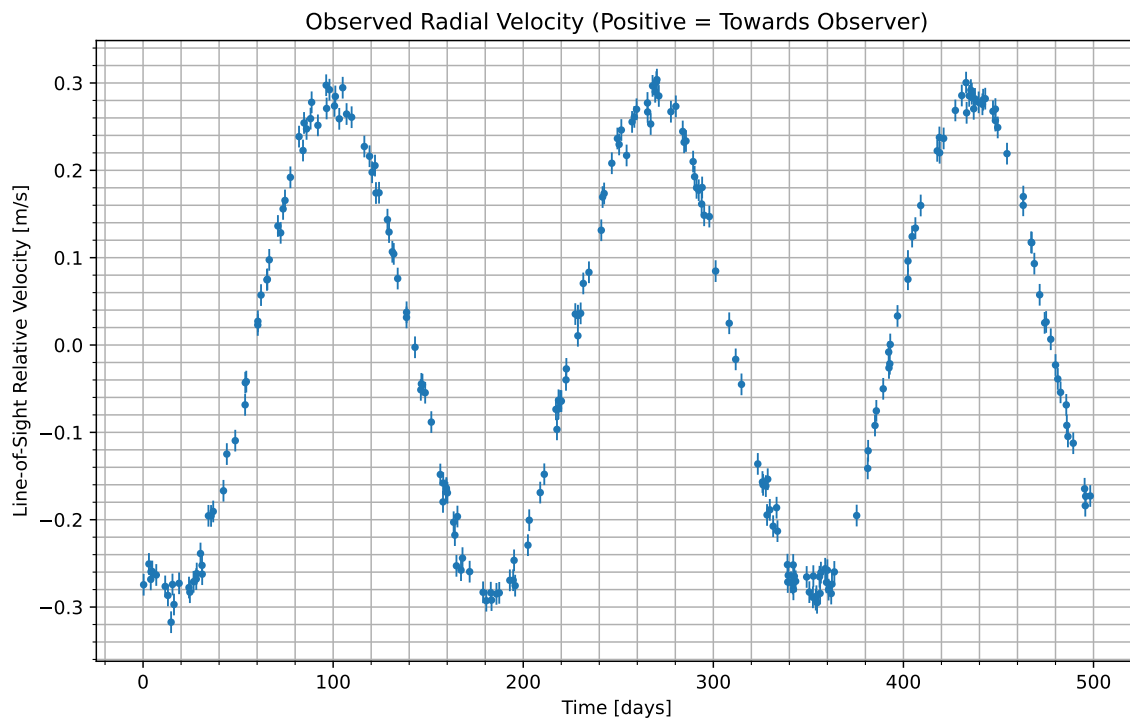


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2097-12-27/01:04. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

Molecule	Concentration
N_2	11.5
CO_2	61.8
H_2O	26.6

Gas Abundance (percent by volume)

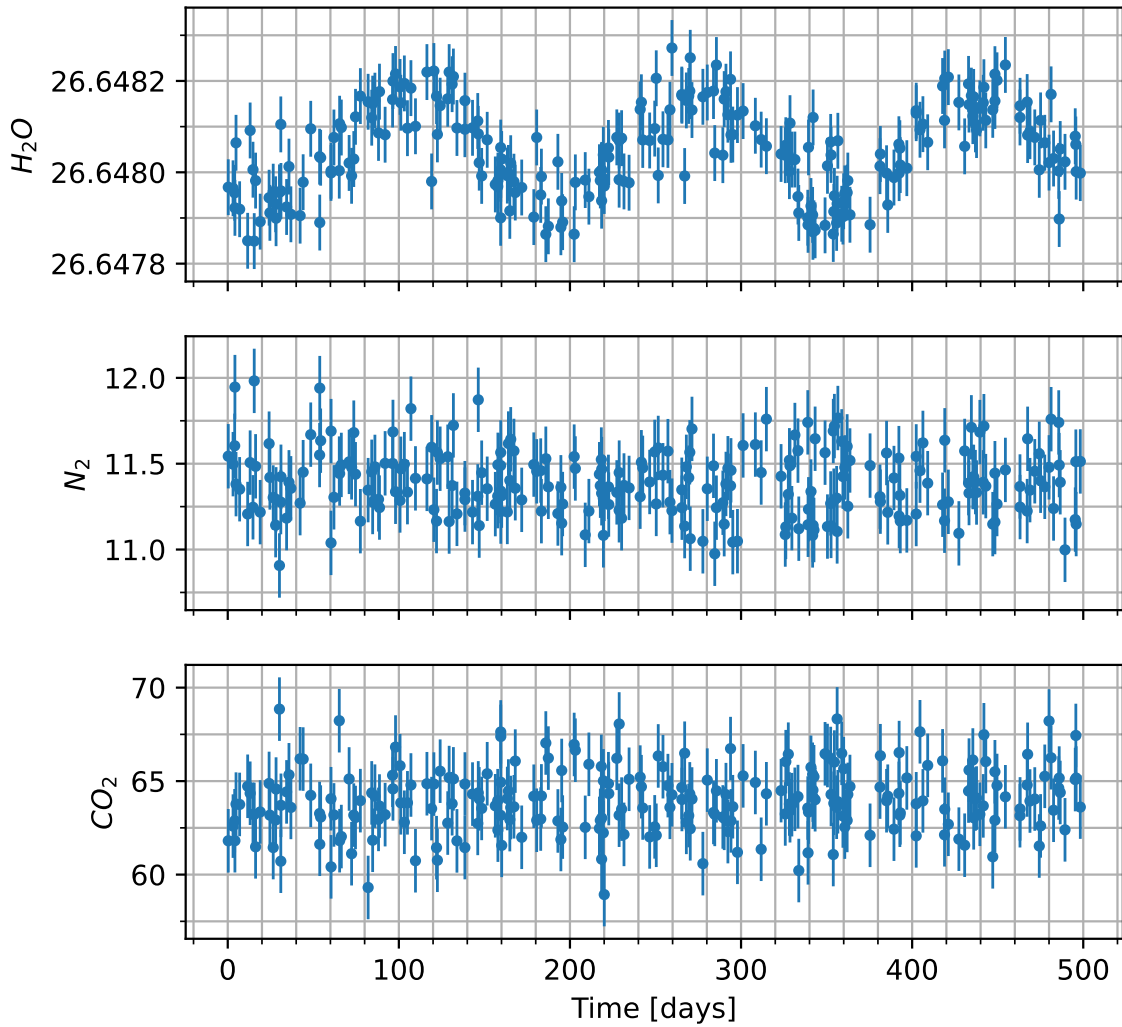


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

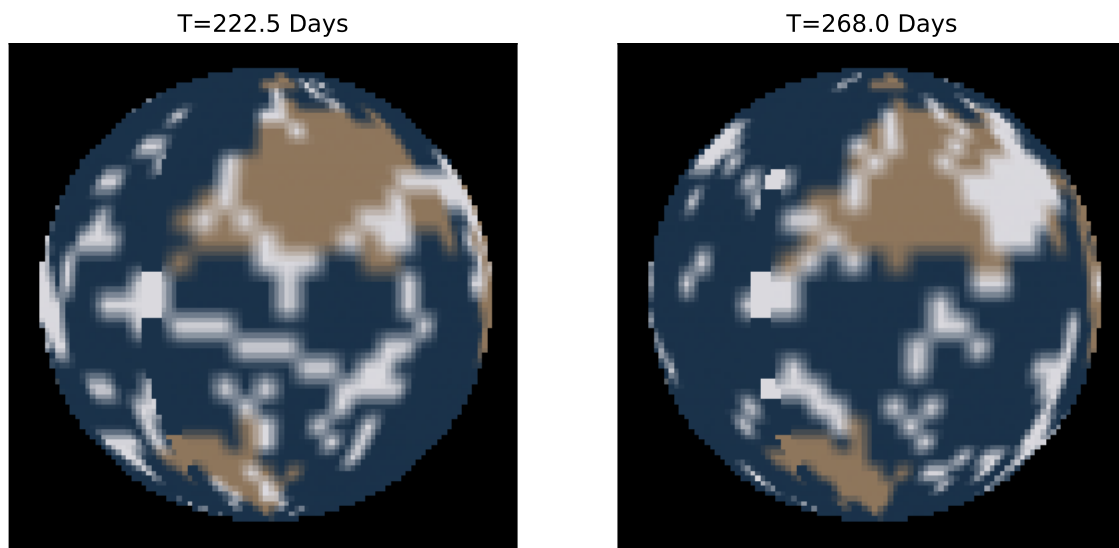


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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