

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

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101011101001010111000111101110010111110010100
101000110101101000001011011010100000011011011
111010101011011010000010001110001011010010110
001100001111100001100010101111011010111010110
101100000000000100100000101111110110101110111
001011111001010010100001011111100000001000100
10111111011111010110101101111001010101101010
011010000111101110101111001111100110010111111
010000010000001011111001111000100110010110100
```

This signal was first noticed at UTC 2074-10-26/04:06.

Parameters of the candidate planet of origin and its host star

Spectral Type	M
Stellar Luminosity (Solar Units)	0.000329
Stellar Mass (Solar Masses)	0.101
Distance to Star (lightyears)	163.6
Planet Mass (Earth masses)	1.7
Atmospheric Pressure (atm)	6.4

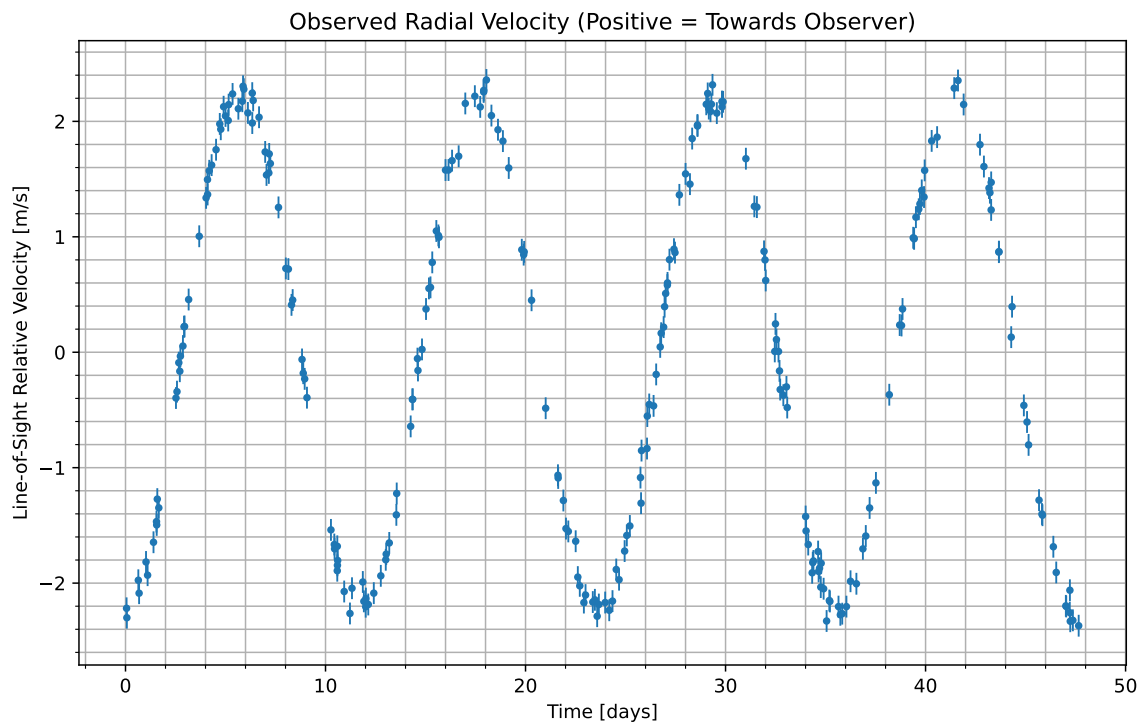


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2074-10-26/11:57. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

Molecule	Concentration
N_2	31.2
CO_2	46.2
H_2O	22.6

Gas Abundance (percent by volume)

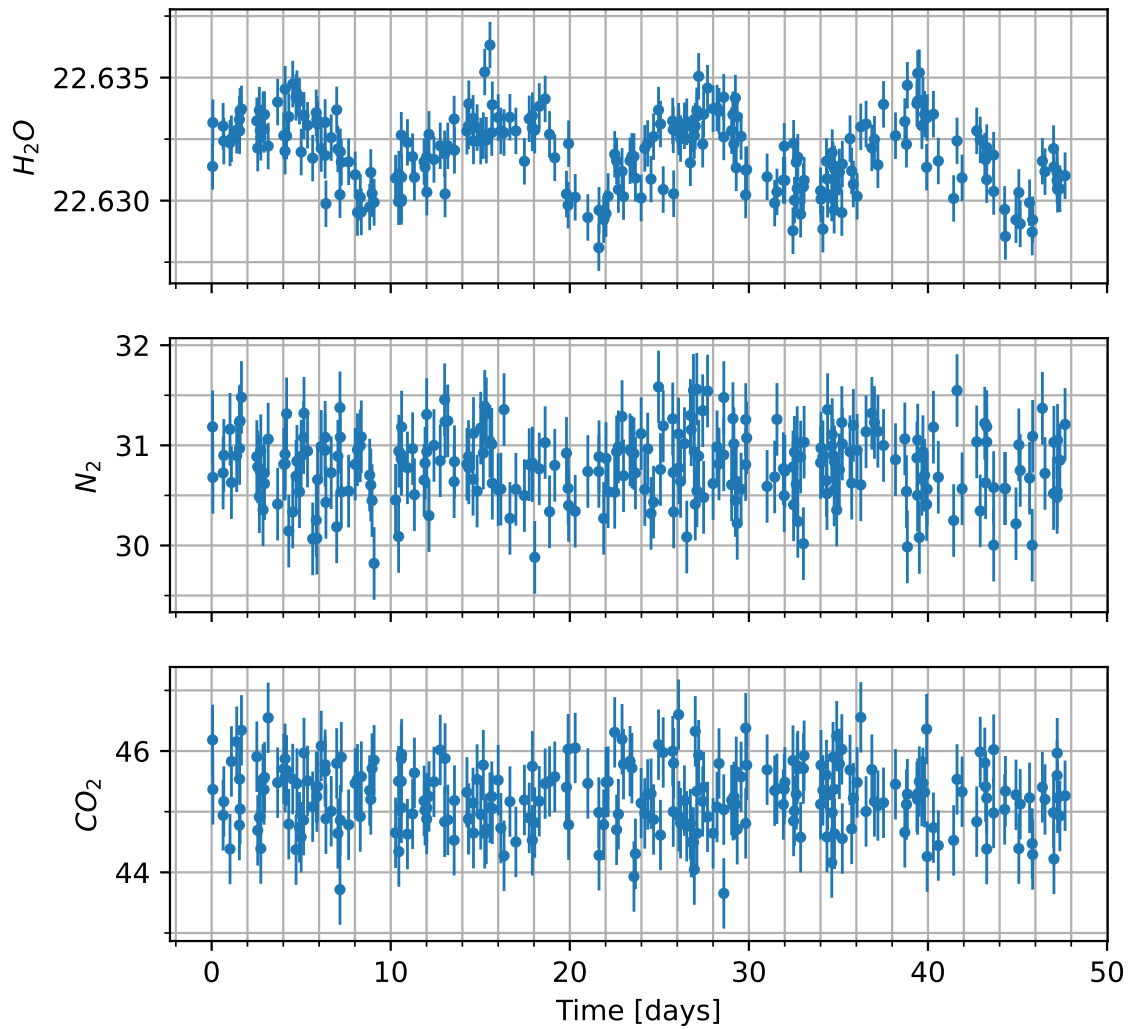


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

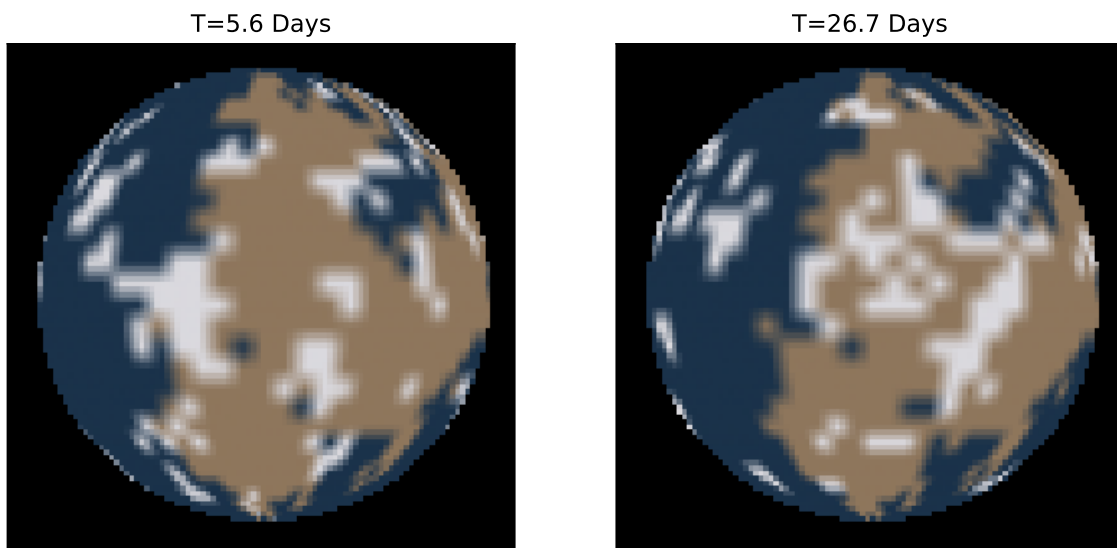


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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