

AST251 Project 3 – Evaluating Claims of Extraterrestrial Messaging

popovi1
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 narrowband 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 has been observed to repeat itself regularly. The transmission is shown below:

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00111111111111111111111111111111111111111111111111111111111111111111111111111111111111100
00100000000000001010000000011111000111100000000000000000001010000000011111000111100
0010000000000000001001000000011100111001100000000000000000001001000000011100000001100
001000000000000000100010000001101111101100000000000000000001000100000011100000001100
00100000000000000010000100001101111110100000000000000000001000010000011000000000100
0010000000000000001000001000110111111010000000000000000000100000100011000000000100
001000000000000000100000010001101111110100000000000000000001000000100011000000000100
0010000000000000001000000010011101111101100000000000000000001000000010011100000001100
0010000000000000001000000001011100111001100000000000000000001000000001011100000001100
0011111111111111111111111111111110001111111111111111111111111111111111111111111111000111100
```

This signal was first noticed at UTC 2078-08-13/11:52.

Parameters of the candidate planet of origin and its host star

Spectral Type	K
Stellar Luminosity (Solar Units)	0.106
Stellar Mass (Solar Masses)	0.571
Distance to Star (lightyears)	187.9
Planet Mass (Earth masses)	1.4
Atmospheric Pressure (atm)	3.4

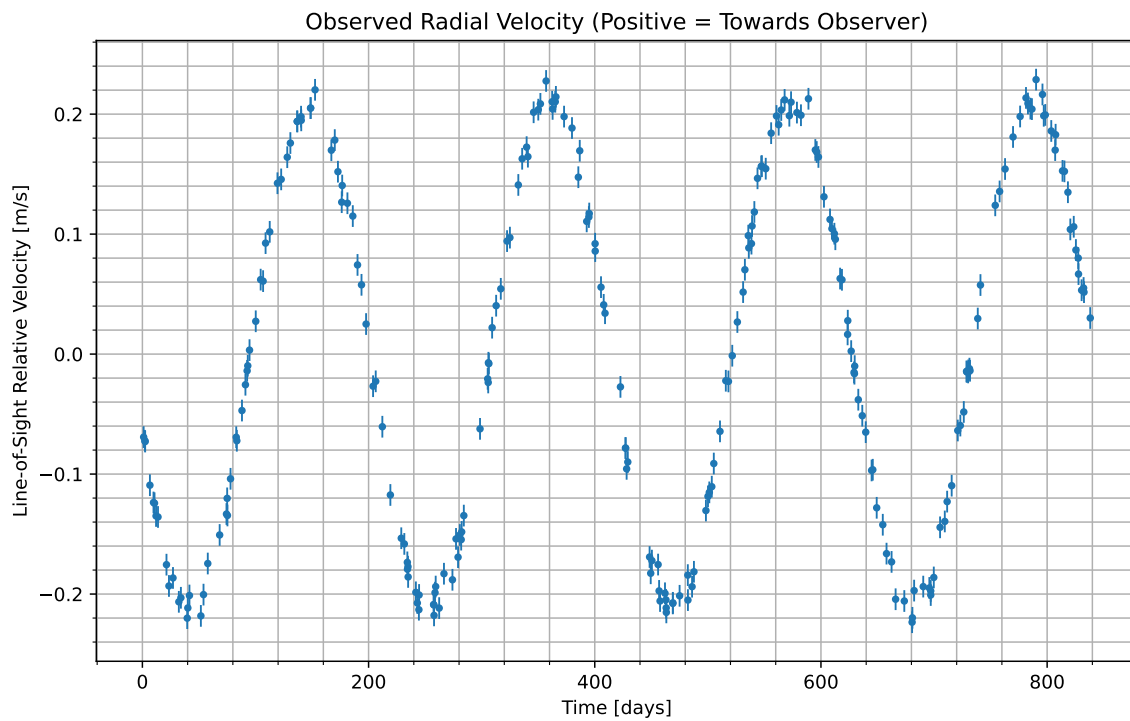


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2078-08-15/13:30. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

Molecule	Concentration
N_2	44.5
CO	15.2
CO_2	12.6
SiH_4	9.96
H_2S	17.7

Gas Abundance (percent by volume)

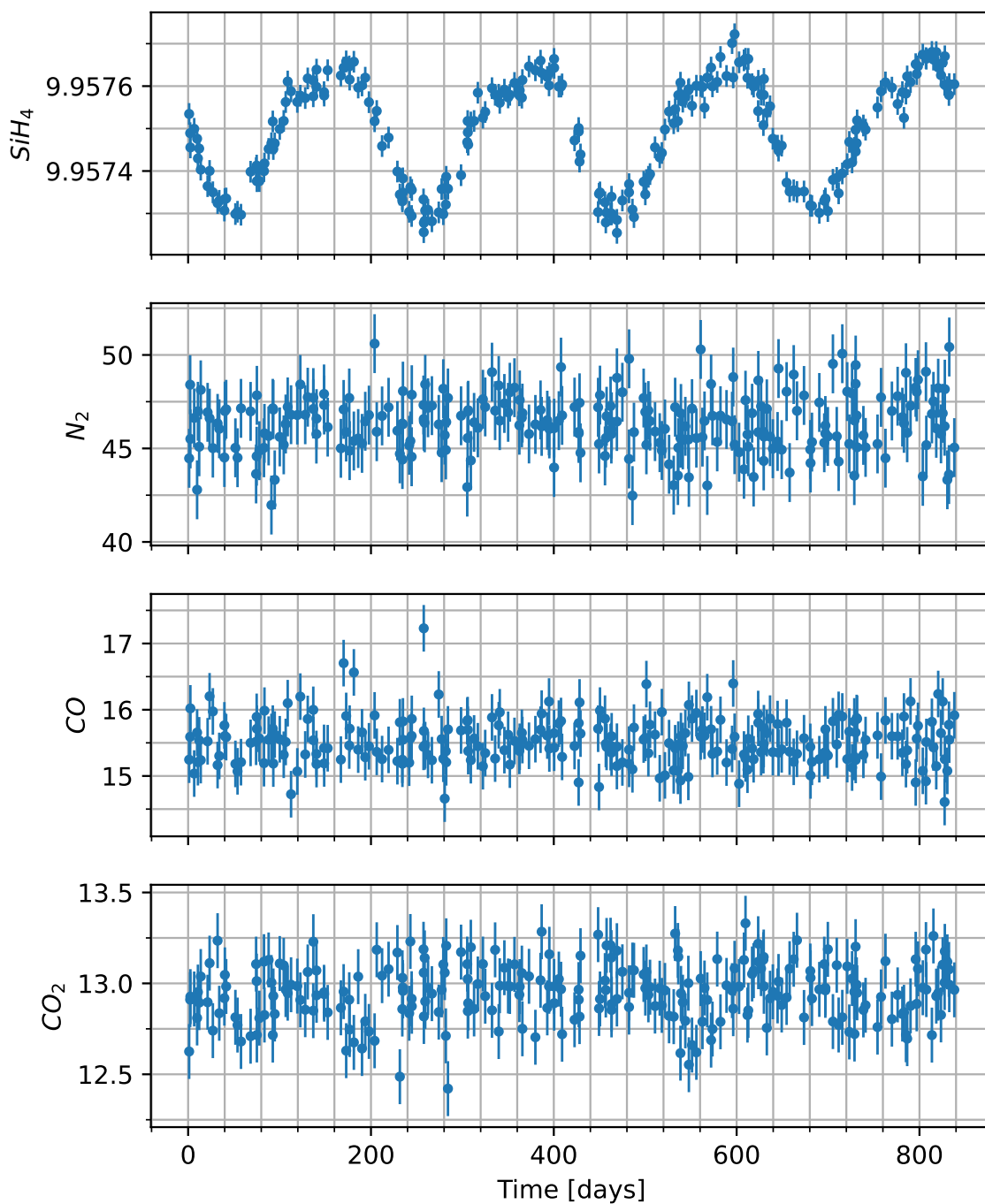


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

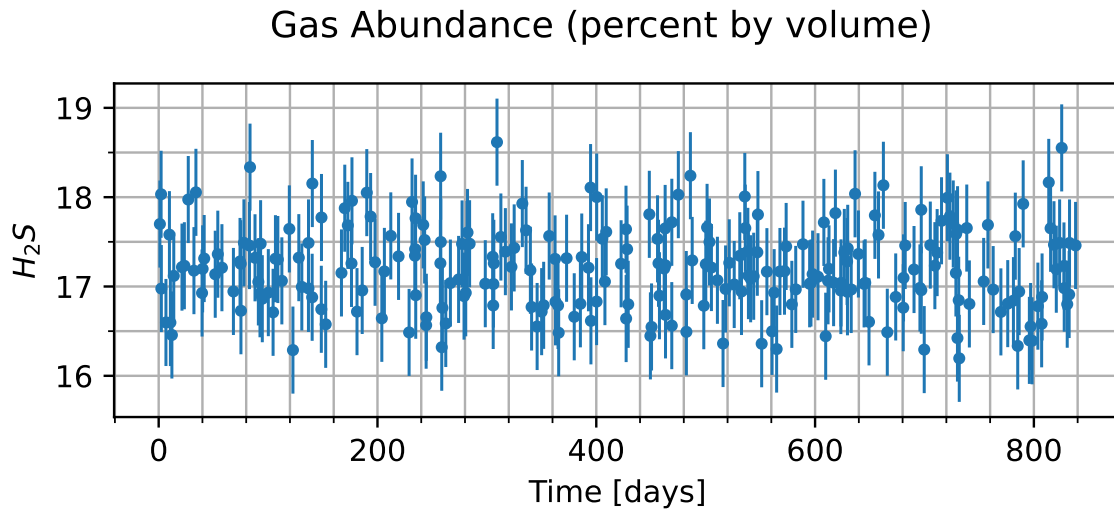


Figure 3: Concentration of various additional gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

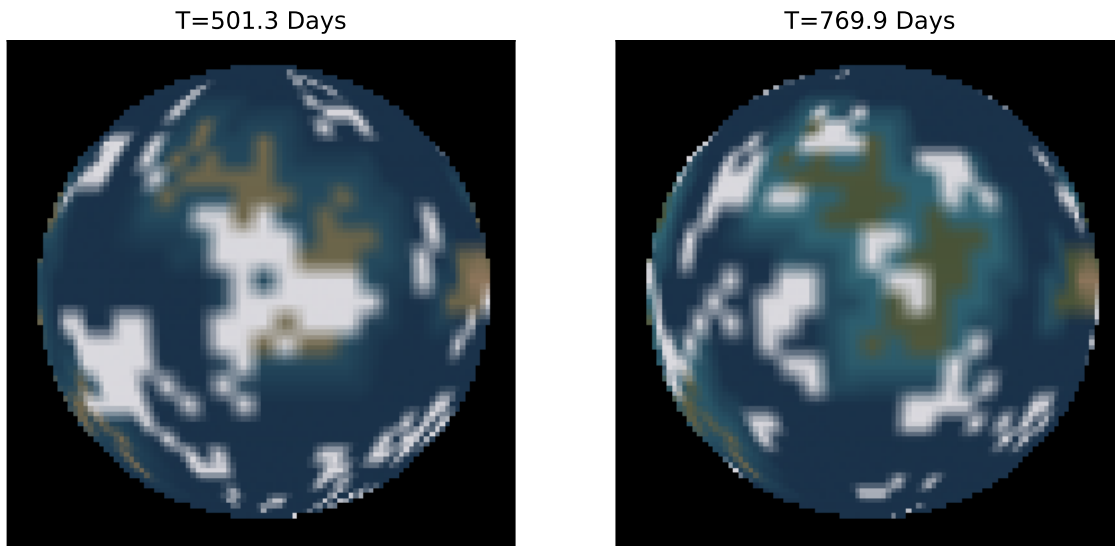


Figure 4: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to be liquid regions of some kind. Other colors present reflect the visible color as best as we are able to measure.