

AST251 Project 3 – Evaluating Claims of Extraterrestrial Messaging khodaei2 Planet 2

Wednesday 10th December, 2087

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 microwave 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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110000000000000000000000000000000000000000000000000000000000000000000011  
11010111111100011111100111111101011111100011111100111111011111011  
11011011111100110000110111111101101111110011111110111111011111011  
11011101111100100000101111111011101111100111111101111110111111011  
11011110111100100000101111111011110111100111111101111110111111011  
110111110111001000001011111110111110111100111111101111110111111011  
110111111011001000001011111110111110111001111111101111110111111011  
110111111101001100001101111111011111011001111111101111110111111011  
110000000000000111111100000000000000000000000000000000000001111110000000011
```

This signal was first noticed at UTC 2085-04-02/13:08.

Parameters of the candidate planet of origin and its host star

Spectral Type	K
Stellar Luminosity (Solar Units)	0.212
Stellar Mass (Solar Masses)	0.679
Distance to Star (lightyears)	1400.8
Planet Mass (Earth masses)	2.7
Atmospheric Pressure (atm)	1.6

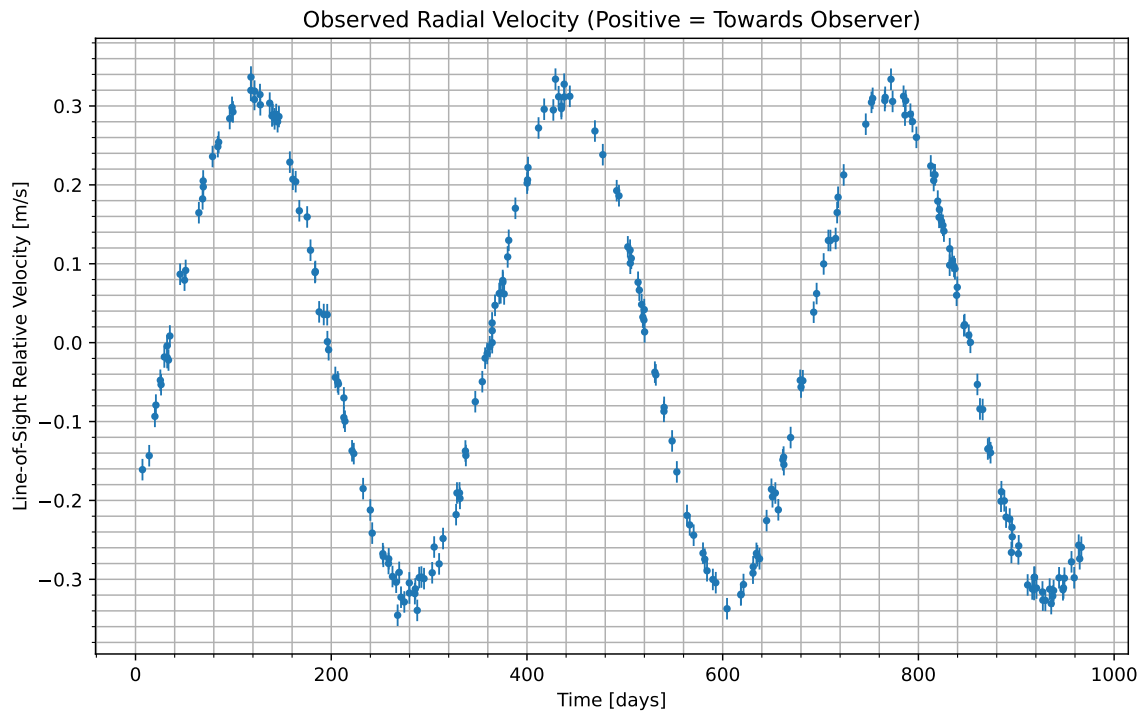


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2085-04-05/12:35. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

Molecule	Concentration
CO_2	43.1
N_2	19.1
CO	9.72
CH_4	8.74
NH_3	2.2
HCN	17.1

Gas Abundance (percent by volume)

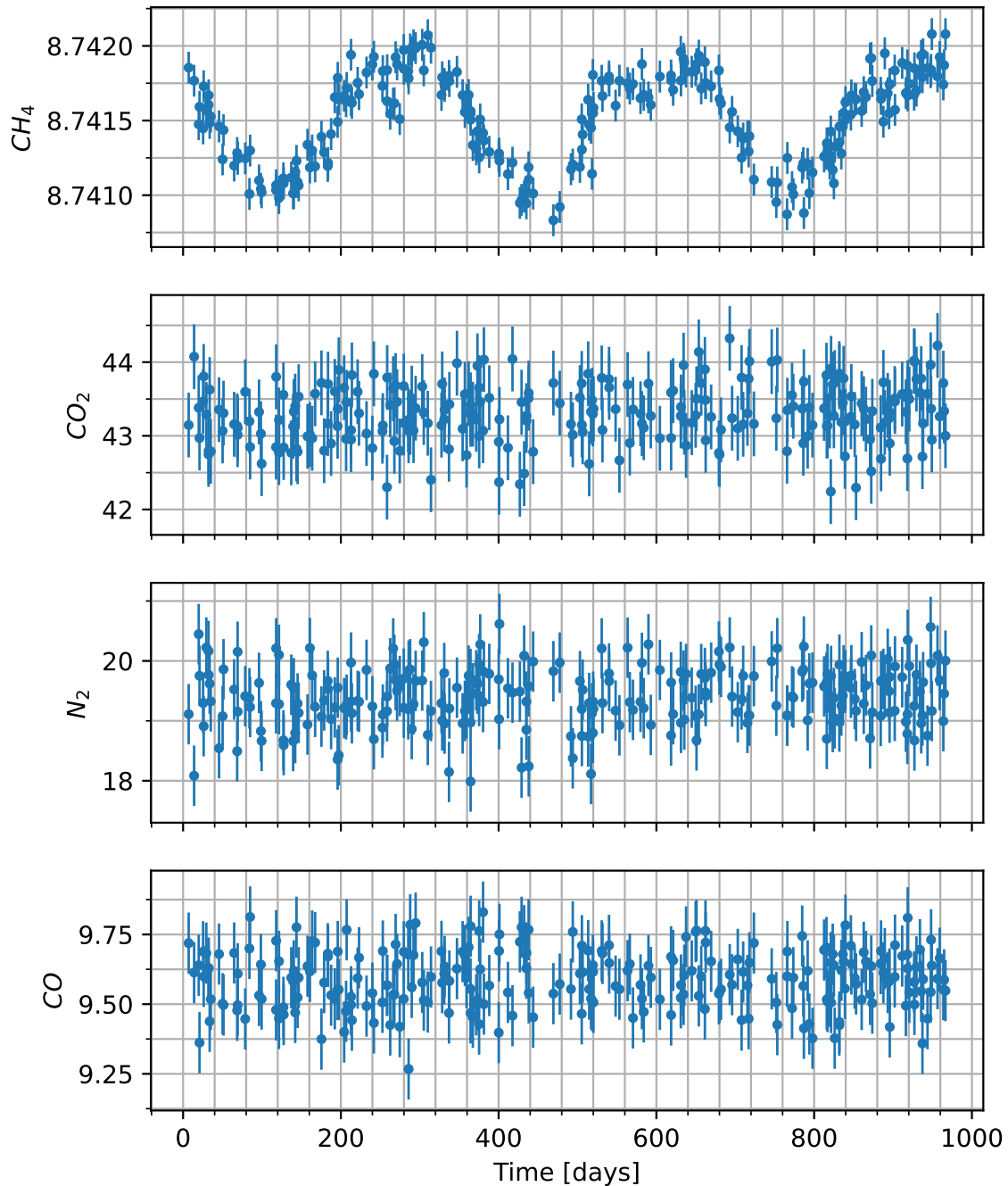


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

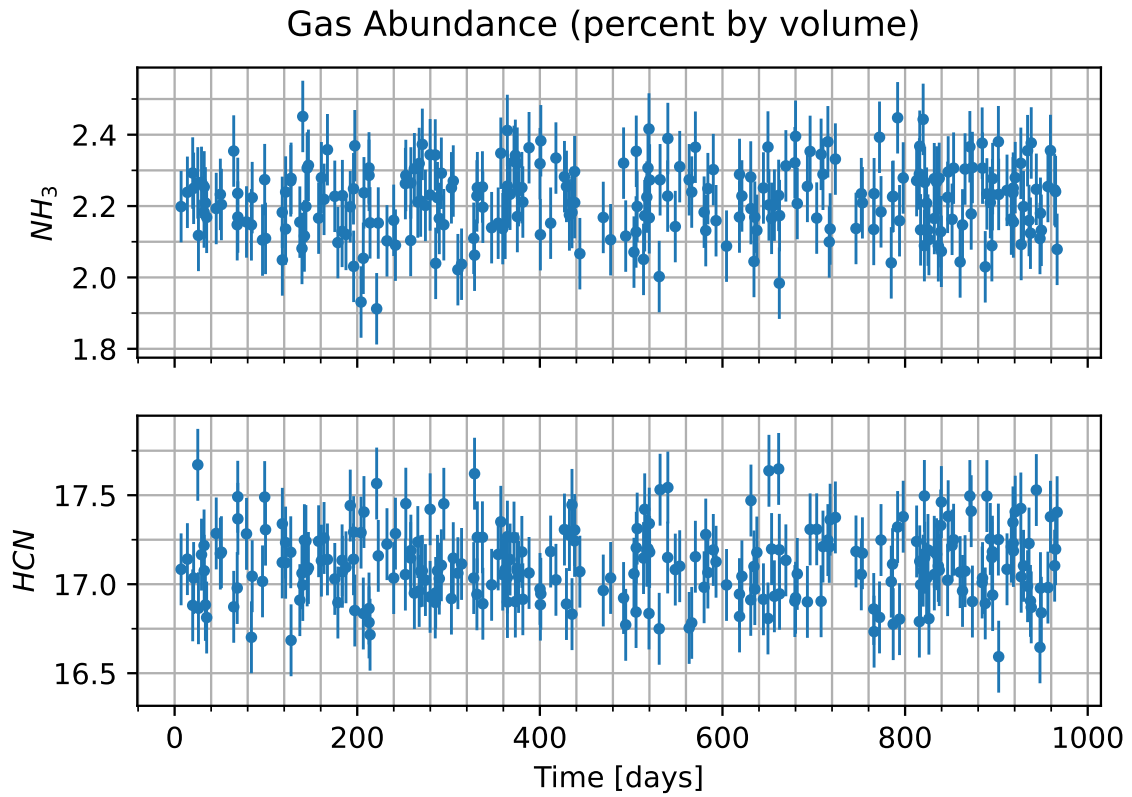
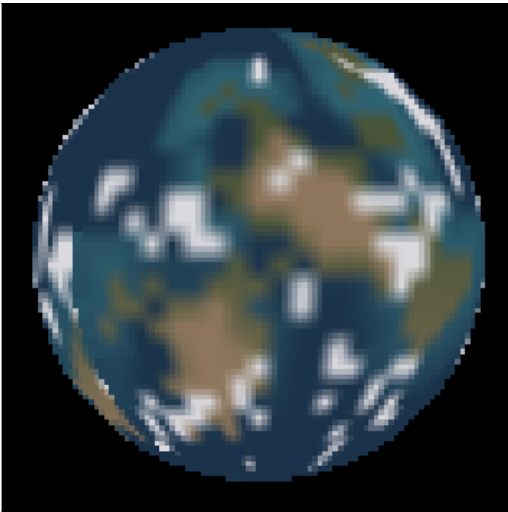


Figure 3: Concentration of various additional gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

T=723.6 Days



T=819.8 Days

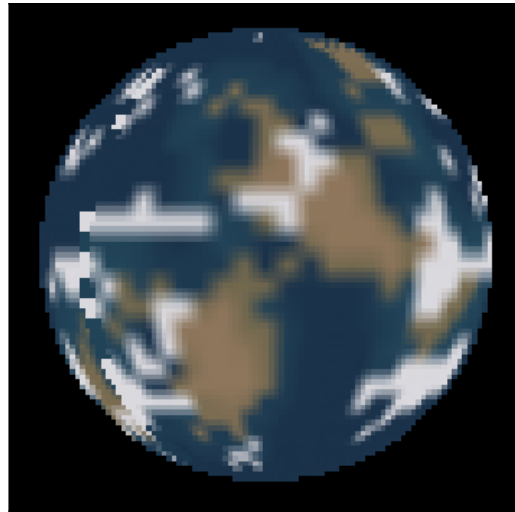


Figure 4: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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