

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

Tuesday 23rd November, 2088

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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00011111111111111111111111111111111100100010000010000010000001111111111000  
0001010000000010000000010100000001001000100001000001000000100000001000  
00011111111111100000000100100000001111000100001000001000000100000001000  
000111111111111000000001000100000011111111100001000001000000100000001000  
0001111111111110000000010000100000111111111111111111100000100000001000  
0001111111111110000000010000010001111111111111111111100000100000001000  
000111111111111000000001000000100011111111111111111111110000001000  
000111111111111000000001000000010011111111111111111111111110000001000  
0001111111111110000000010000000010111111111111111111111111110000001000  
000111111111111111111111111111111111111111111111111111111111111111000
```

This signal was first noticed at UTC 2084-08-10/10:21.

Parameters of the candidate planet of origin and its host star

Spectral Type	K
Stellar Luminosity (Solar Units)	0.445
Stellar Mass (Solar Masses)	0.817
Distance to Star (lightyears)	622.3
Planet Mass (Earth masses)	0.4
Atmospheric Pressure (atm)	0.6

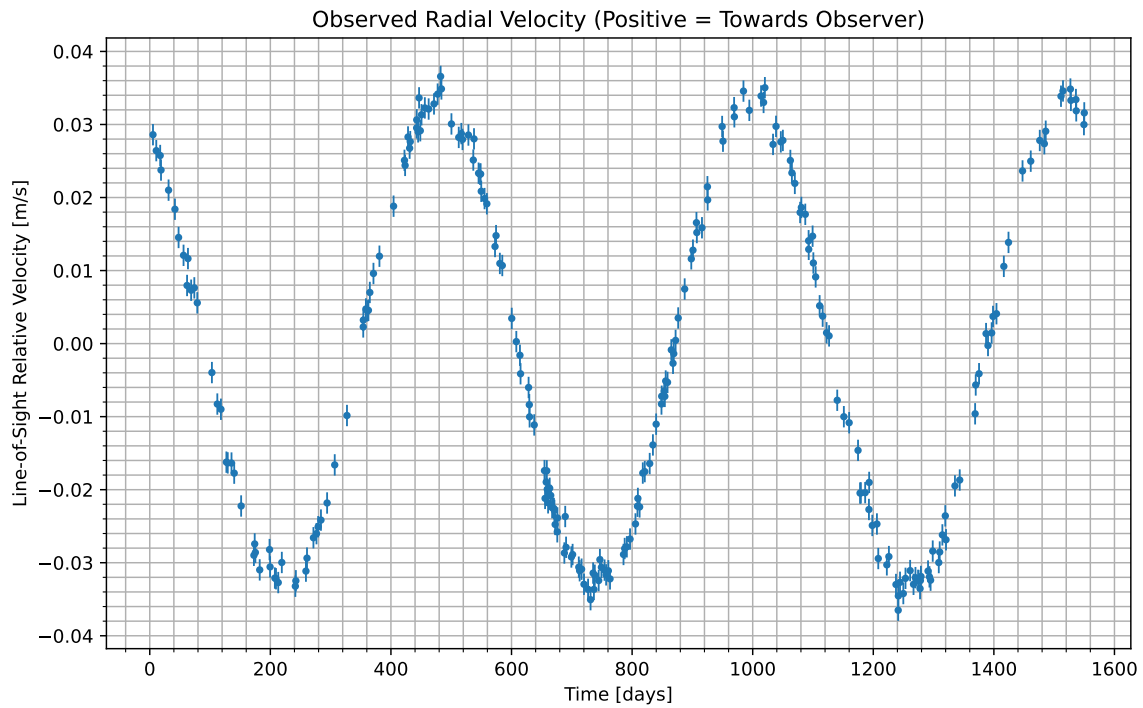


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2084-08-11/06:53. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

Molecule	Concentration
CO_2	53
N_2	5.62
CO	4.88
CH_4	12.2
NH_3	8.83
HCN	15.4

Gas Abundance (percent by volume)

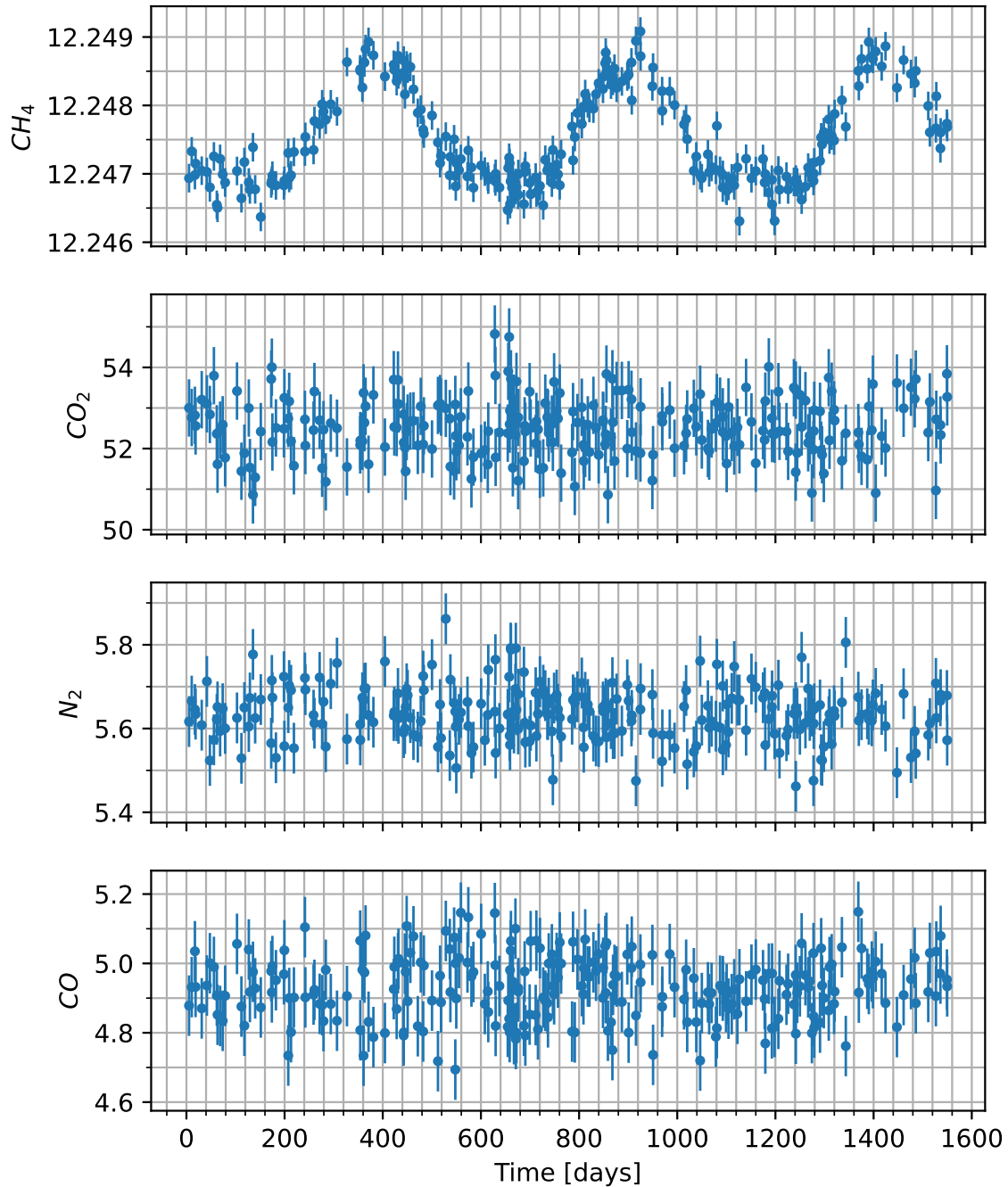


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

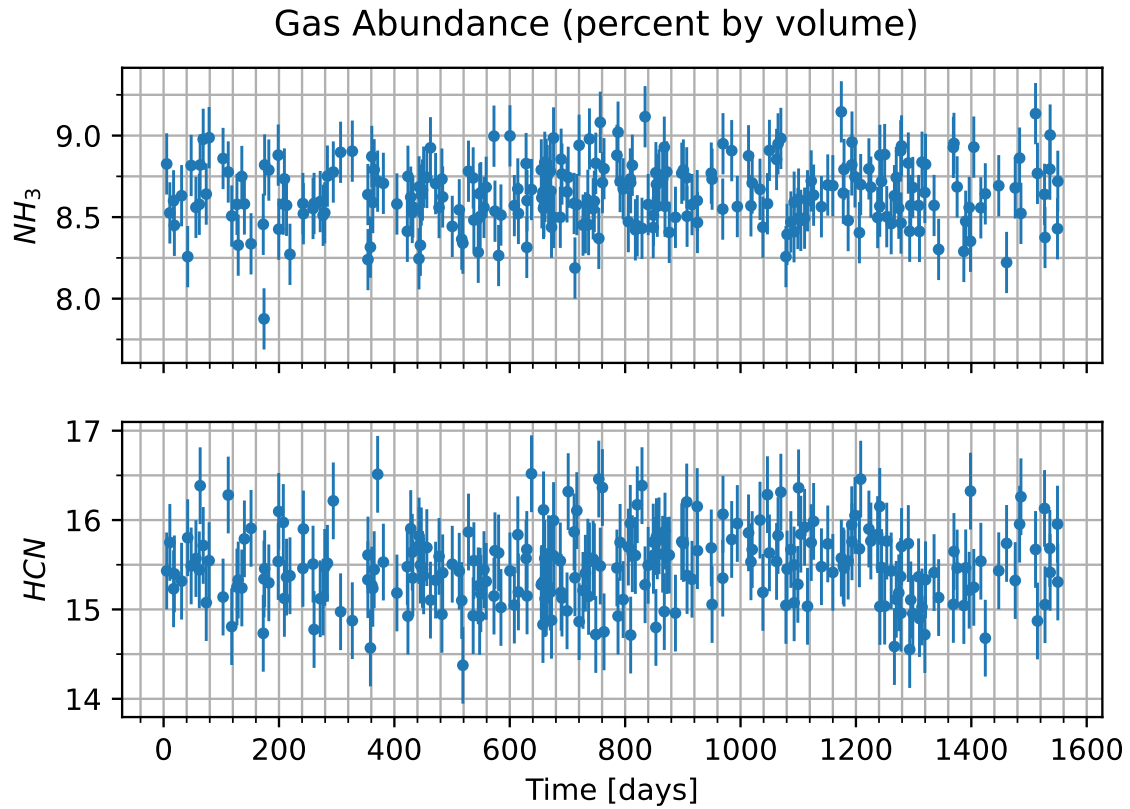
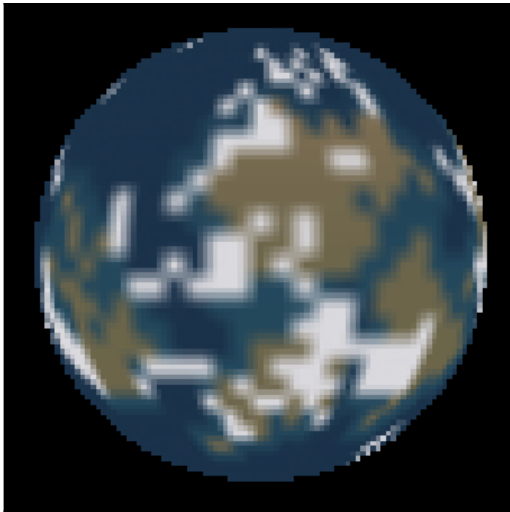


Figure 3: Concentration of various additional gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

T=456.2 Days



T=1092.7 Days

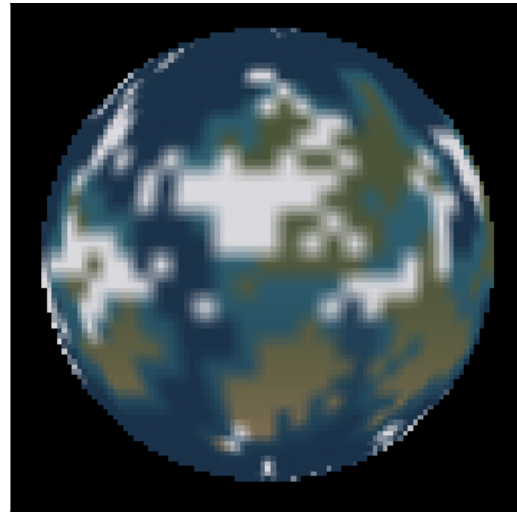


Figure 4: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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