AST251 Project 3 – Evaluating Claims of Extraterrestrial Messaging
regojaen
Planet 1

Saturday 25th December, 2083

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 optical 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 is continuous and does not repeat itself frequently. An excerpt of the transmission is shown below:

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01110111001101111101110001010001111011110001010000111010101
01110010001010000111001101111100101011100100110000011100010 1
01001101110010011110110100001011101111010010100001011101100 1
10111010101111001101010010001111000110110100011110111111010 1
10000100011100111011001100101011100000111110100110001011111 1
11101101100101011110100101101011010001001010010100000111110 0
11110010111010101100010100111011110000000110110111111110110 1
00101111001000100111000111111010000100111100111001101011010 1
```

This signal was first noticed at UTC 2079-10-23/04:48.

Parameters of the candidate planet of origin and its host star

Spectral Type	F
Stellar Luminosity (Solar Units)	1.45
Stellar Mass (Solar Masses)	1.1
Distance to Star (lightyears)	31.1
Planet Mass (Earth masses)	2.0
Atmospheric Pressure (atm)	3.4

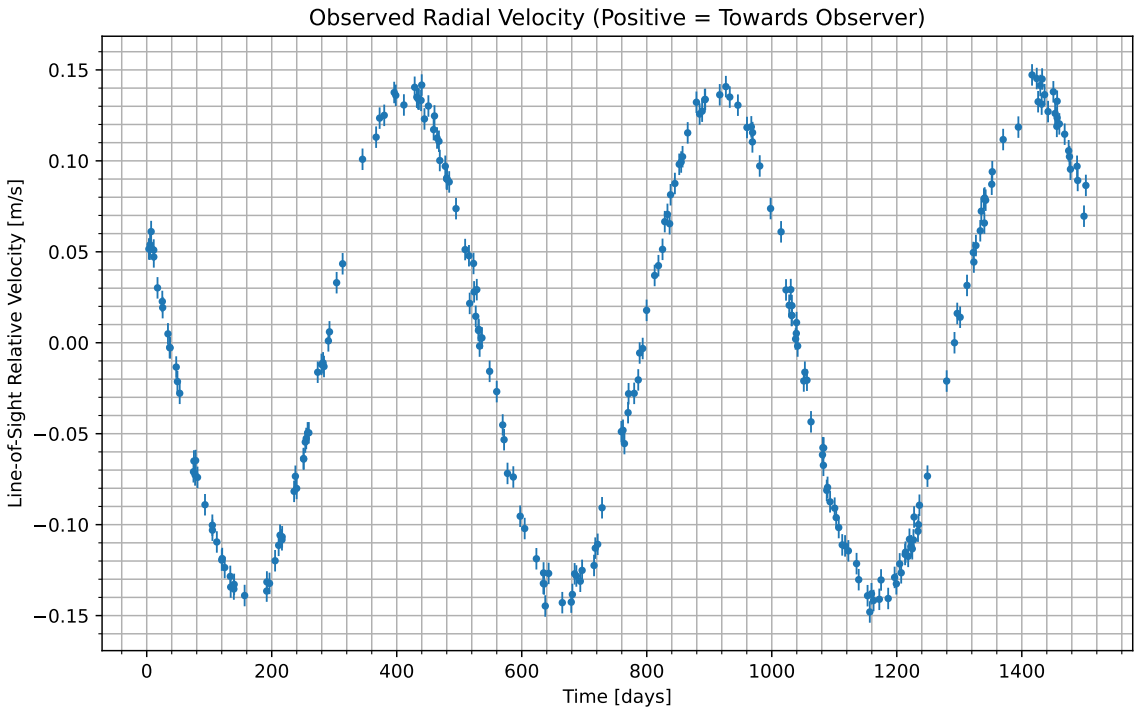

Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2079-10-24/23:11. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

Molecule	Concentration
N_2	34.4
CO_2	31.6
H_2O	34.1

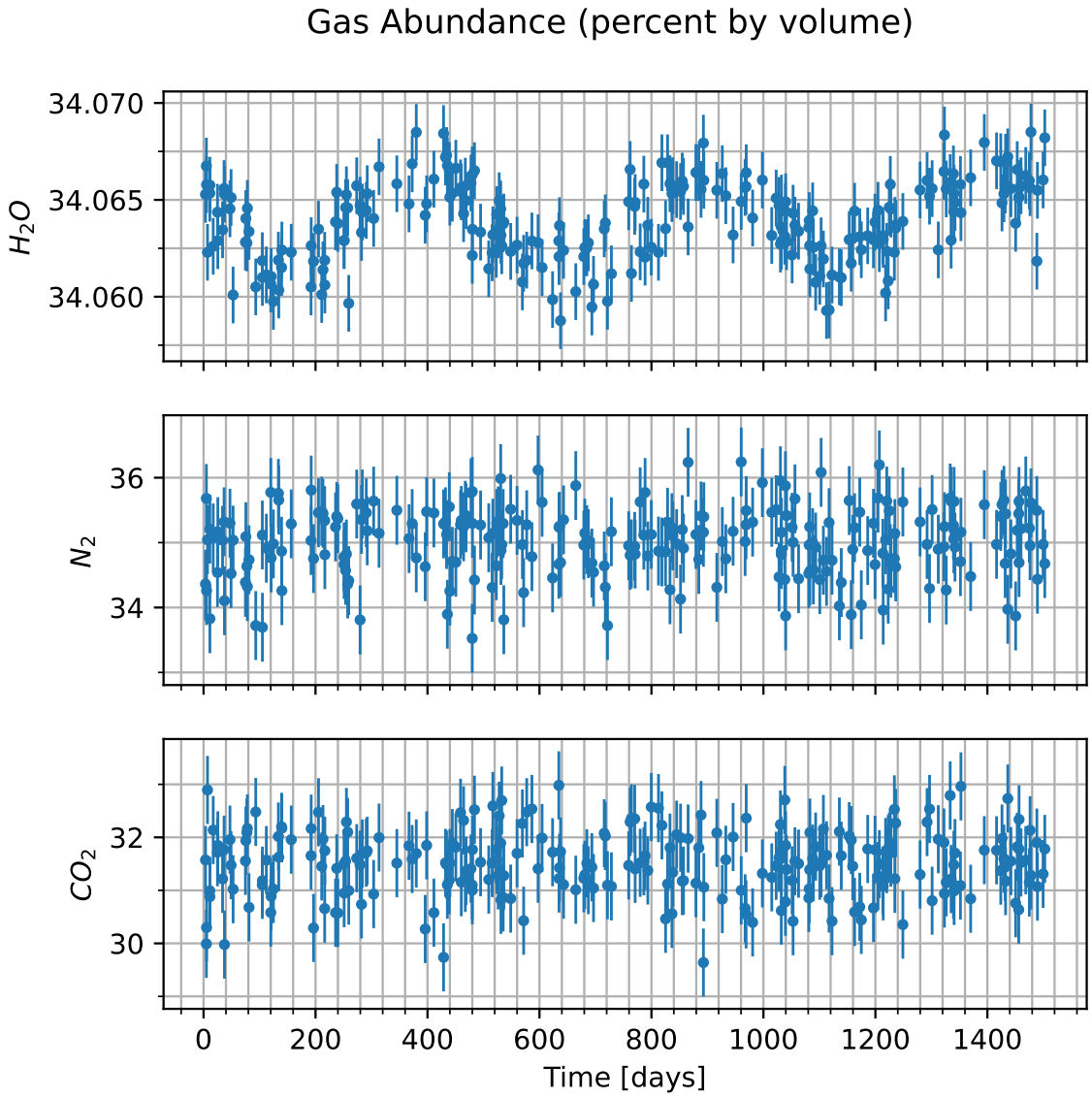

Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

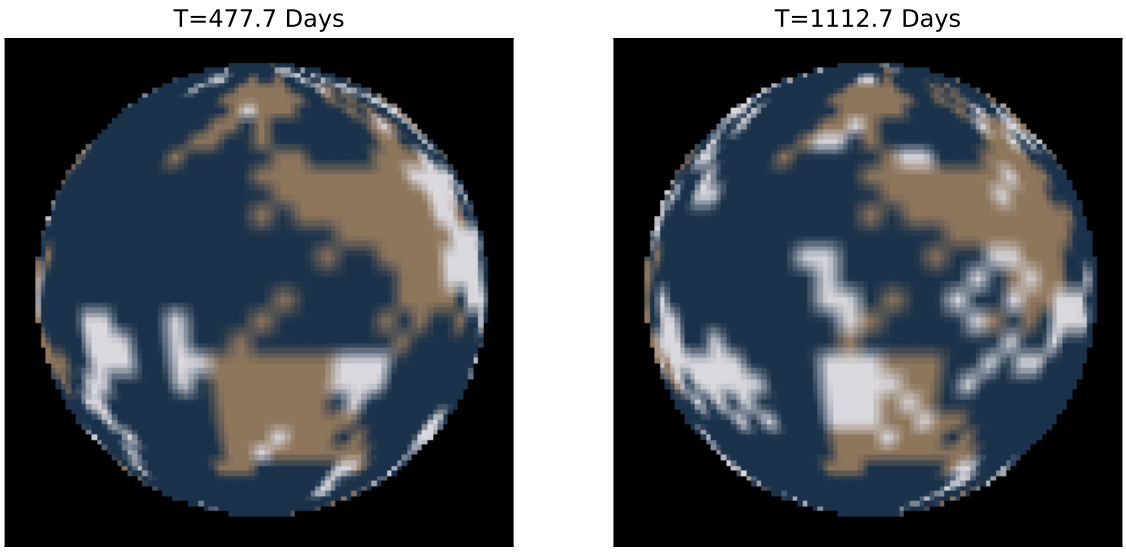

Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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