AST251 Project 3 – Evaluating Claims of Extraterrestrial Messaging
pedernal
Planet 3

Friday 29th April, 2089

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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00100100011111011111101110101001111010001110111110001110110110111111111
01010111111001001001101111110011000100000111110111000110100100101101011
11101110100000000110111010101101110010010001000000100001000110100100010
11110101001100111000011110101010100010010101100010011011011001110011011
11000011011110110100000101100000100011001110000010010011101011011011100
01111000011101110111001001011010011001001100010010001001001011010001100
10001100111000011001000000011000000000011011100000010011110100101011000 1
10110001000001000101000001110001100010011000001010011001001110101101000
01011110101010000110111101100000001100001111000111000010001001100101110
11110001111001011111111000010010101010001100001110011111001100101100001
```

This signal was first noticed at UTC 2086-03-29/15:25.

Parameters of the candidate planet of origin and its host star

Spectral Type	G
Stellar Luminosity (Solar Units)	1.22
Stellar Mass (Solar Masses)	1.05
Distance to Star (lightyears)	102.7
Planet Mass (Earth masses)	1.0
Atmospheric Pressure (atm)	1.2

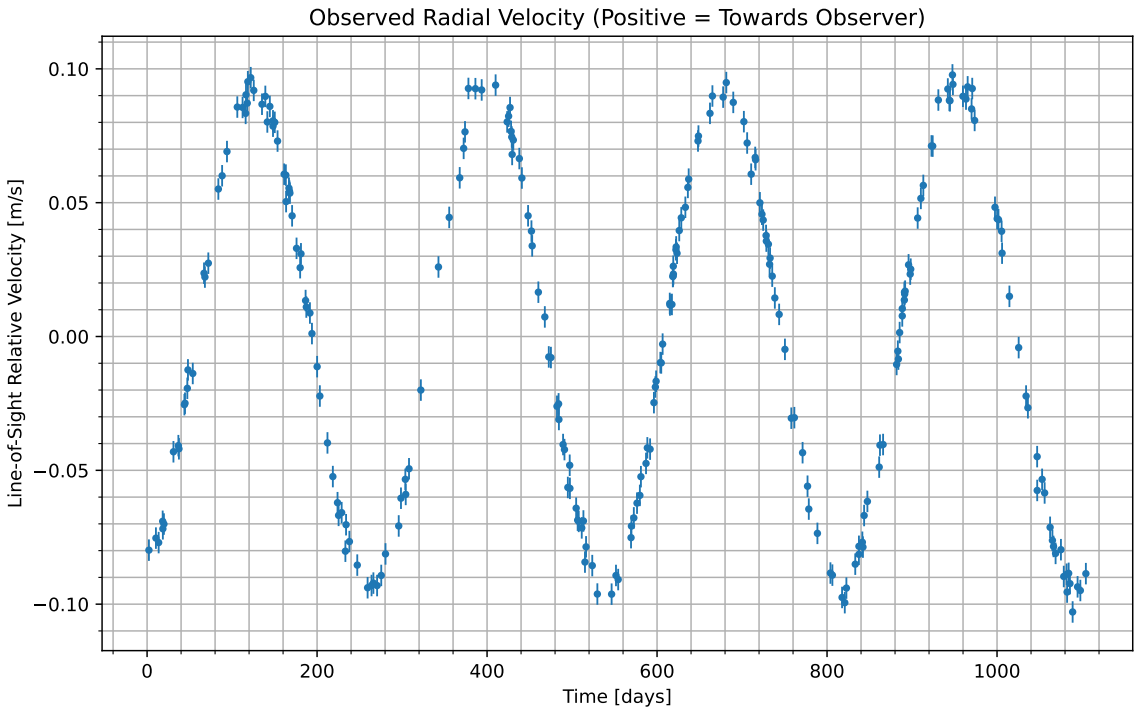

Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2086-04-01/08:29. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

Molecule	Concentration
N_2	42.5
CO_2	31
H_2O	26.5

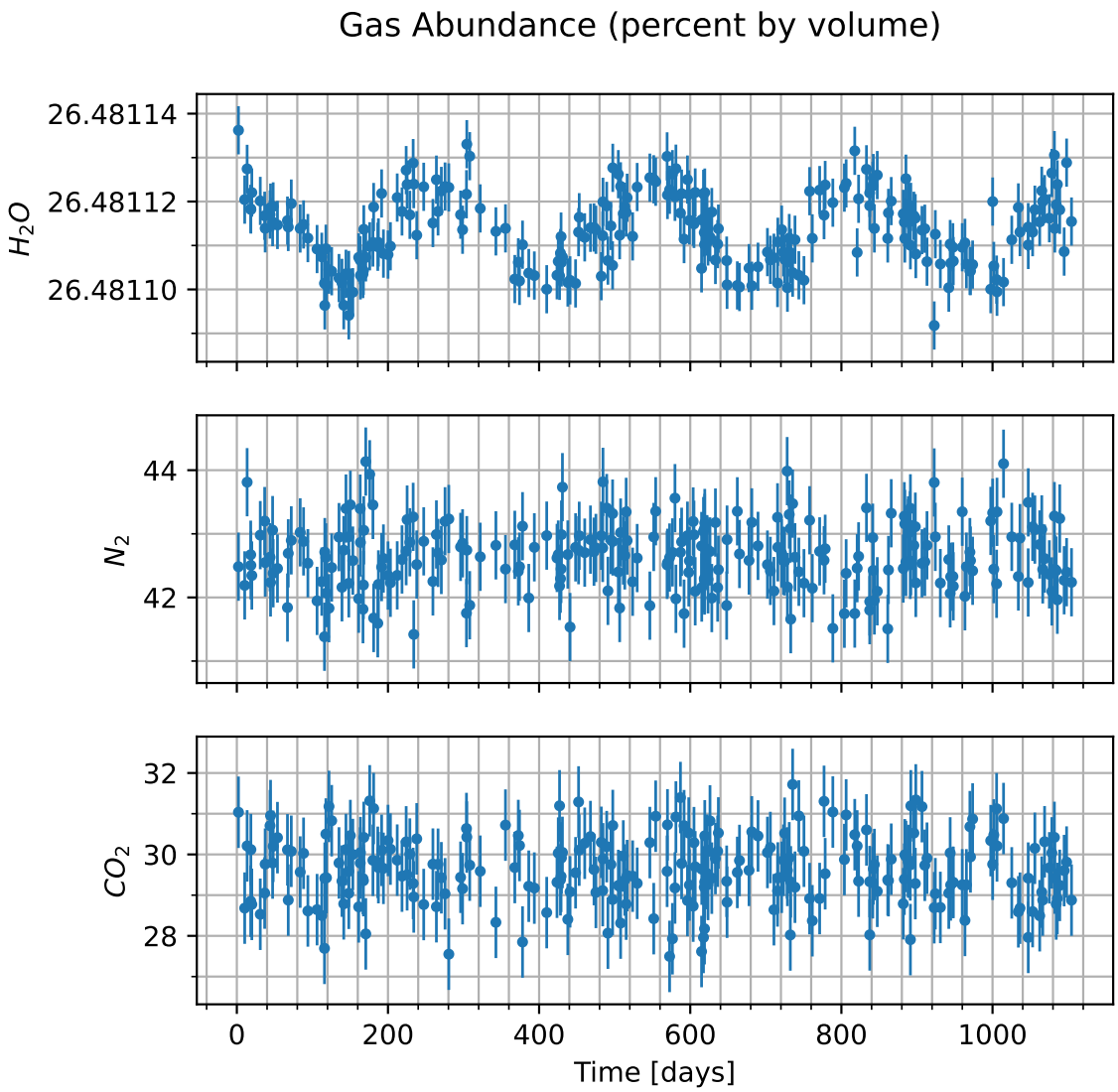

Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

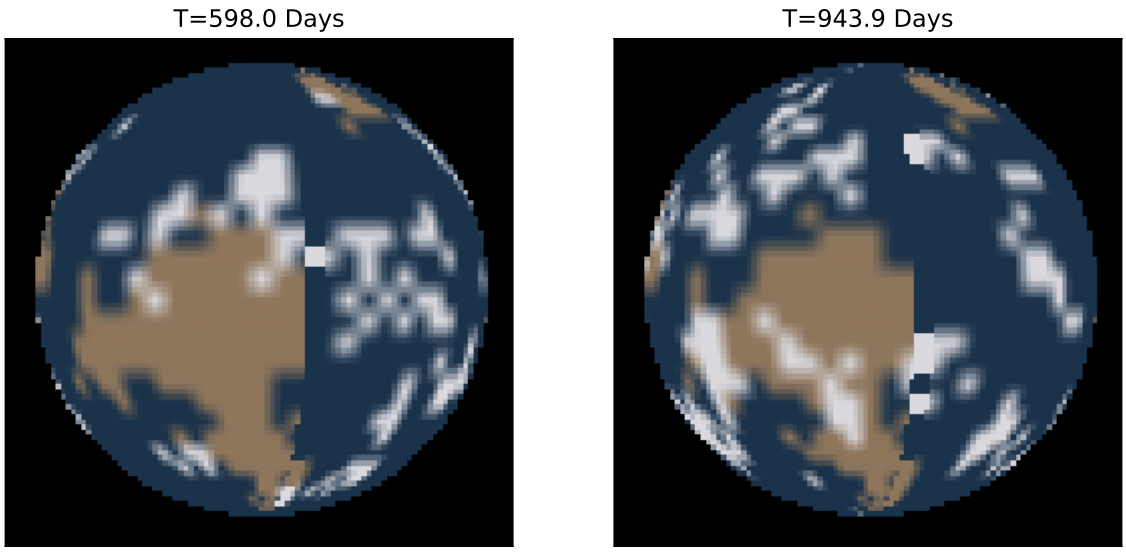

Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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