AST251 Project 3 – Evaluating Claims of Extraterrestrial Messaging
crummey1
Planet 1

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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 broadband 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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10001010101010011000101011011001010110000010000001110100
01111000110011100101111111000011001010011010111010001011
10000111110100010110111011011110011001110101111100101110
01100111010101001111101000111010000000010000001101111010
11001011010110011111011000110010010110101001001001111011111
01111000100110001011110110100100111011101100100101011111
10100101000010110111101100110101100101101100011011011110
11101111100010000000011110101011011101101001111011010000
```

This signal was first noticed at UTC 2081-01-06/22:30.

Parameters of the candidate planet of origin and its host star

Spectral Type	K
Stellar Luminosity (Solar Units)	0.402
Stellar Mass (Solar Masses)	0.796
Distance to Star (lightyears)	55.4
Planet Mass (Earth masses)	3.7
Atmospheric Pressure (atm)	13.6

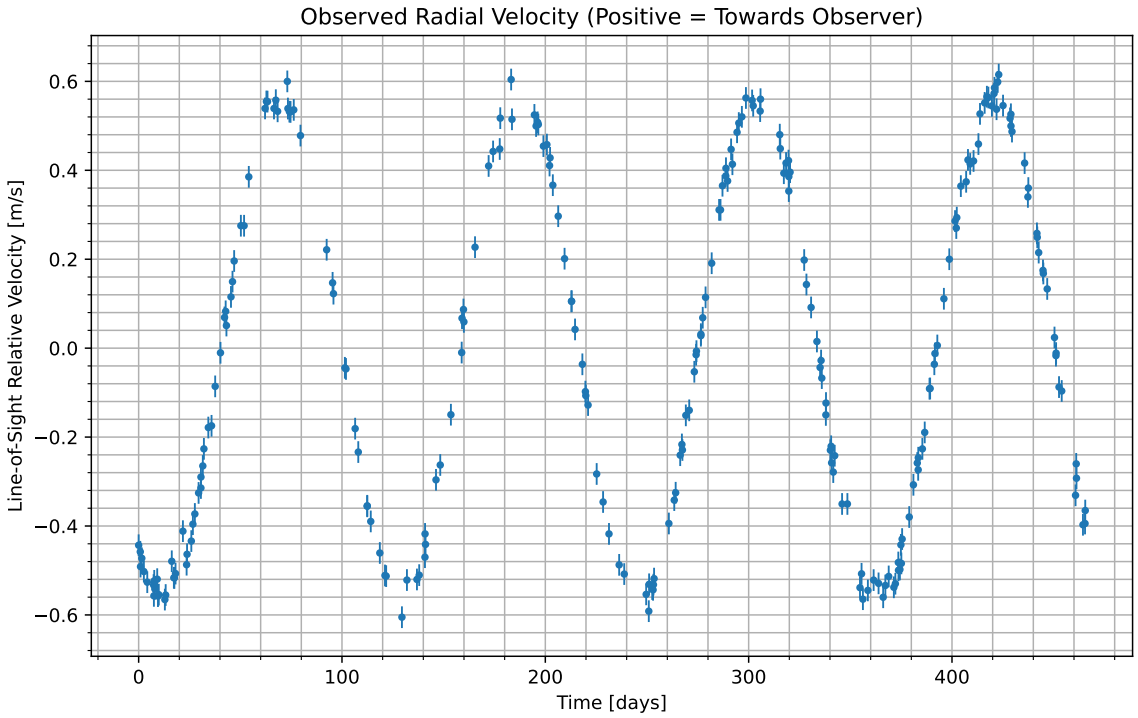

Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2081-01-07/16:27. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

Molecule	Concentration
N_2	26.7
CO_2	40.7
H_2O	32.5

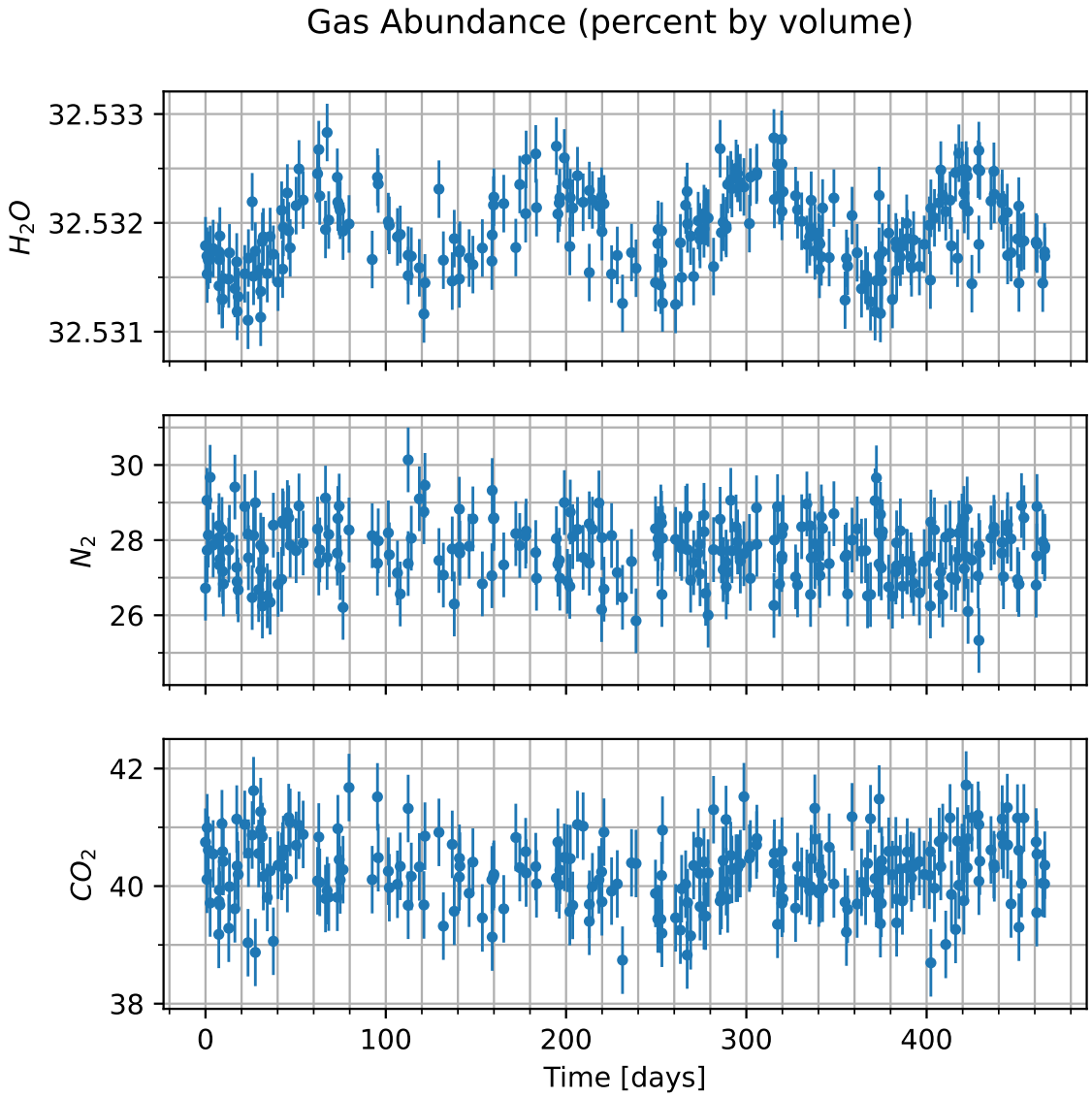

Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

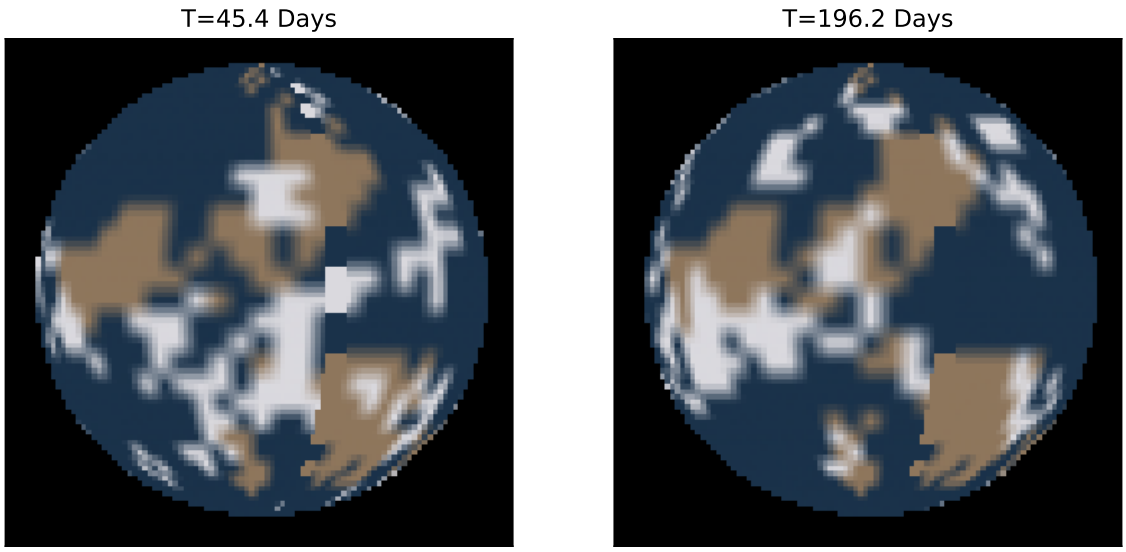

Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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