AST251 Project 3 – Evaluating Claims of Extraterrestrial Messaging
akberal2
Planet 2

Tuesday 23rd March, 2100

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

```
10011111001111001001111001101000001100010010011110000011001010
00000000101111110010100101010100111110001000011010111010010100
01100010111010101100101110001001111011101000110011000100010001
01111110111101011000100111110100011101000010110111010110110000
11011010110001001001001011011111000100111100100100111001101100
11011001011001101110000001011001000110000110101111100000111110
10111011011101010111000101000000101000110010101000110010100000
11000000011101001101100111111001110111001010111001110010011010
00010110100010110110100000111110110000000101111010100011101010
```

This signal was first noticed at UTC 2099-12-30/00:59.

Parameters of the candidate planet of origin and its host star

Spectral Type	M
Stellar Luminosity (Solar Units)	0.000706
Stellar Mass (Solar Masses)	0.128
Distance to Star (lightyears)	272.4
Planet Mass (Earth masses)	1.7
Atmospheric Pressure (atm)	1.1

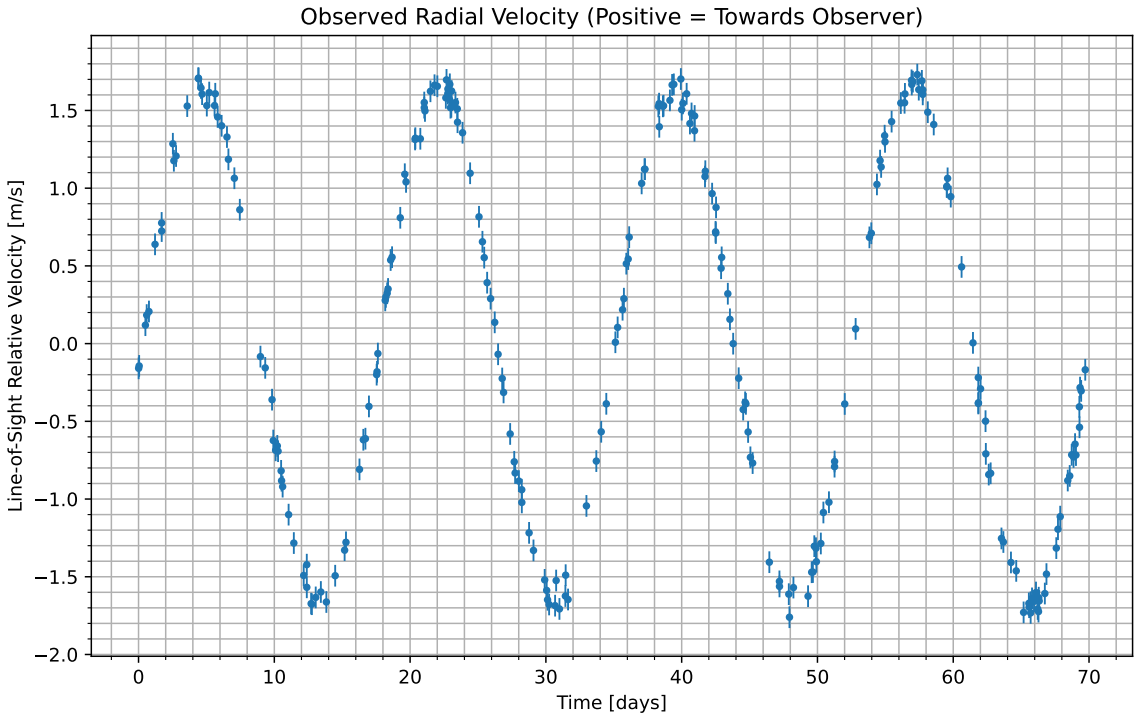

Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2099-12-30/06:33. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

Molecule	Concentration
N_2	31
CO_2	56.5
H_2O	12.5

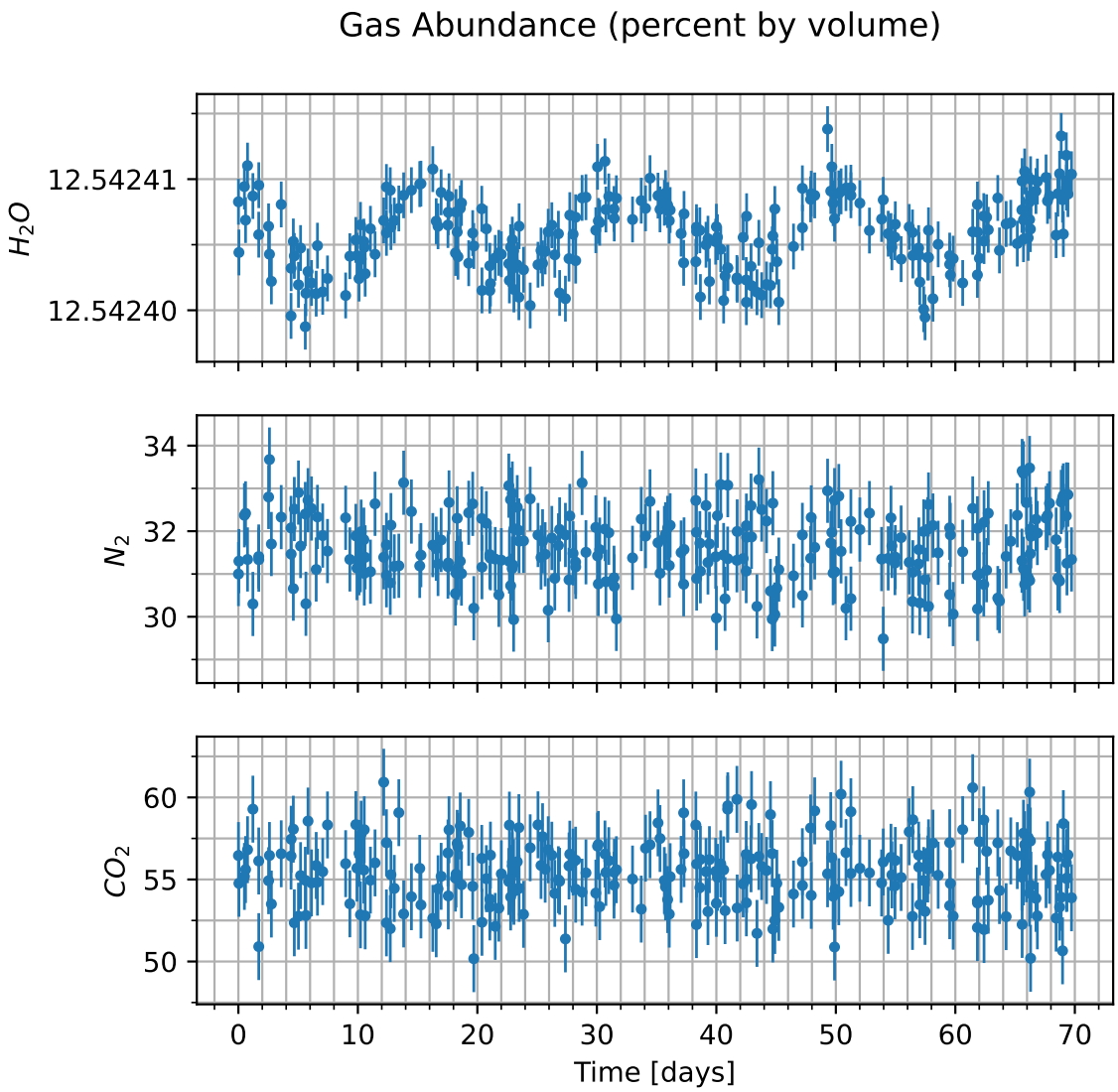

Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

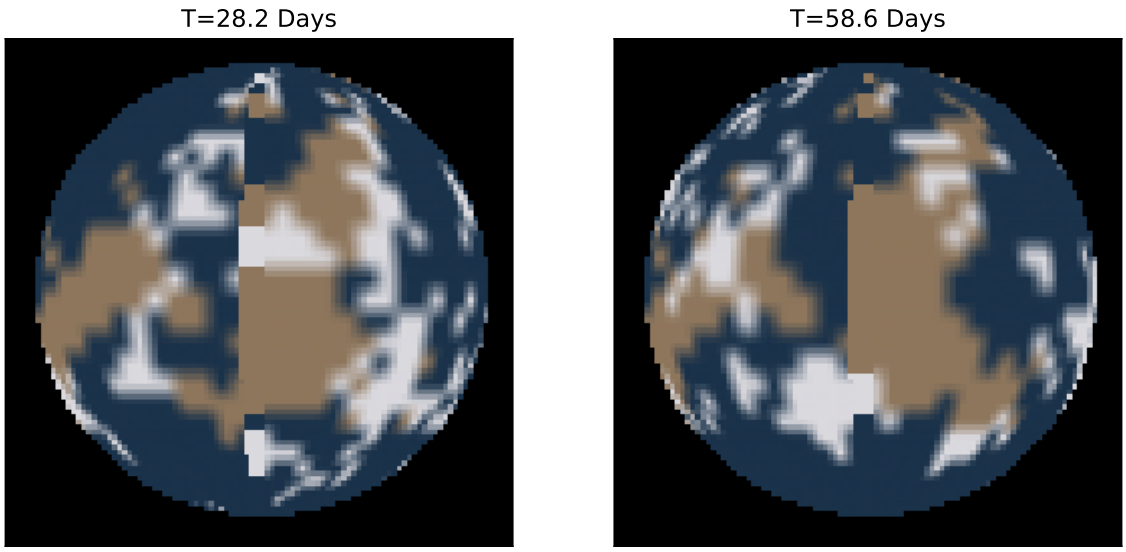

Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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