

AST251 Project 3 – Evaluating Claims of Extraterrestrial Messaging maliks94 Planet 1

Tuesday 21st July, 2082

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 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 has been observed to repeat itself regularly. The transmission is shown below:

```
1110000000000000000000000000000000000000000000000110  
111000011100000000000000000000000000000000000000110  
111000111110001000001000100001000000000000000000  
0000001111100010101010001000010000100000100000111  
110000111110000000000000100001000000000000000111  
11000001110010000000000000000000000000000000000111
```

This signal was first noticed at UTC 2081-11-09/07:20.

Parameters of the candidate planet of origin and its host star

Spectral Type	K
Stellar Luminosity (Solar Units)	0.0406
Stellar Mass (Solar Masses)	0.449
Distance to Star (lightyears)	215.2
Planet Mass (Earth masses)	1.7
Atmospheric Pressure (atm)	2.5

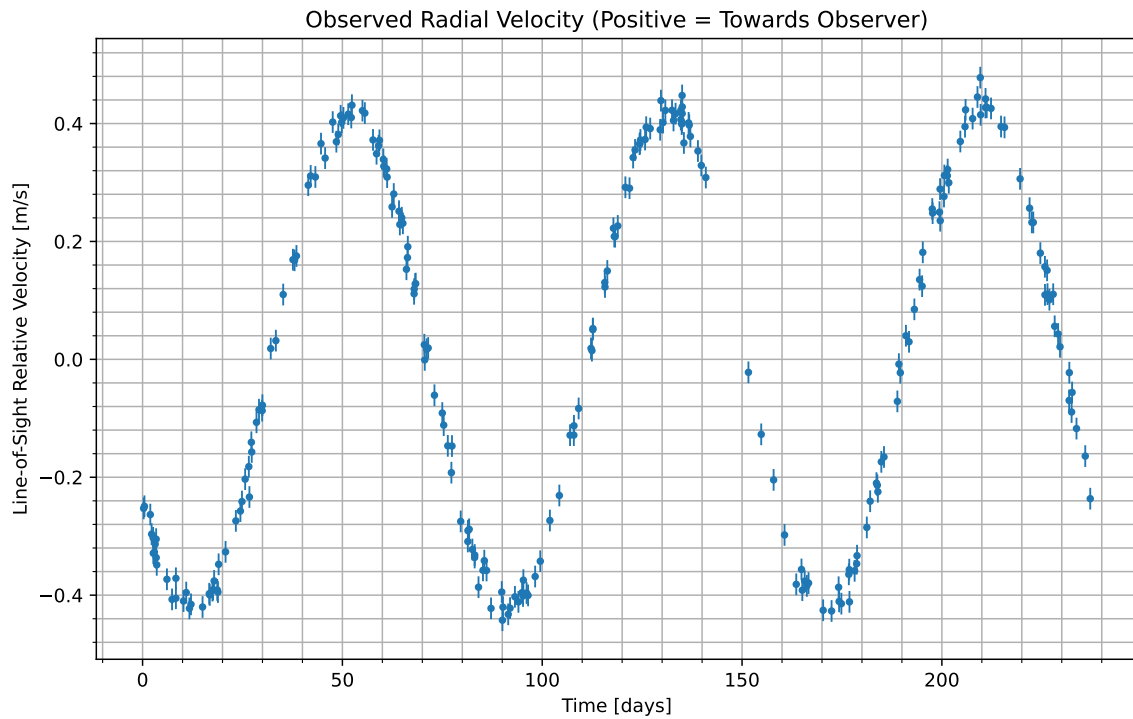


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2081-11-10/13:07. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

Atmospheric composition of the candidate planet (percent by volume)

Molecule	Concentration
N_2	56.8
CO_2	4.98
O_2	22
H_2O	16.1
O_3	0.000141
N_2O	0.162

Gas Abundance (percent by volume)

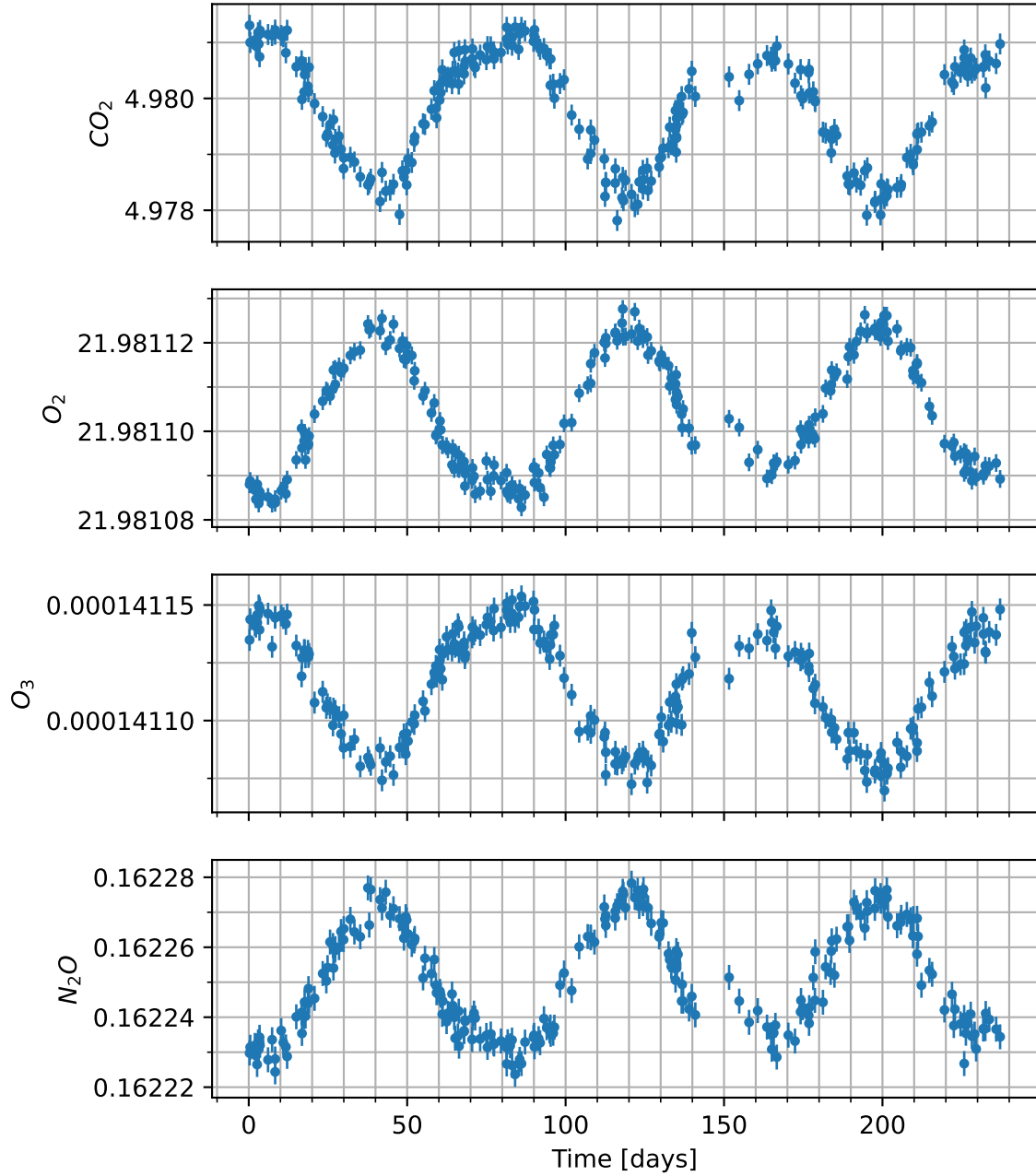


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

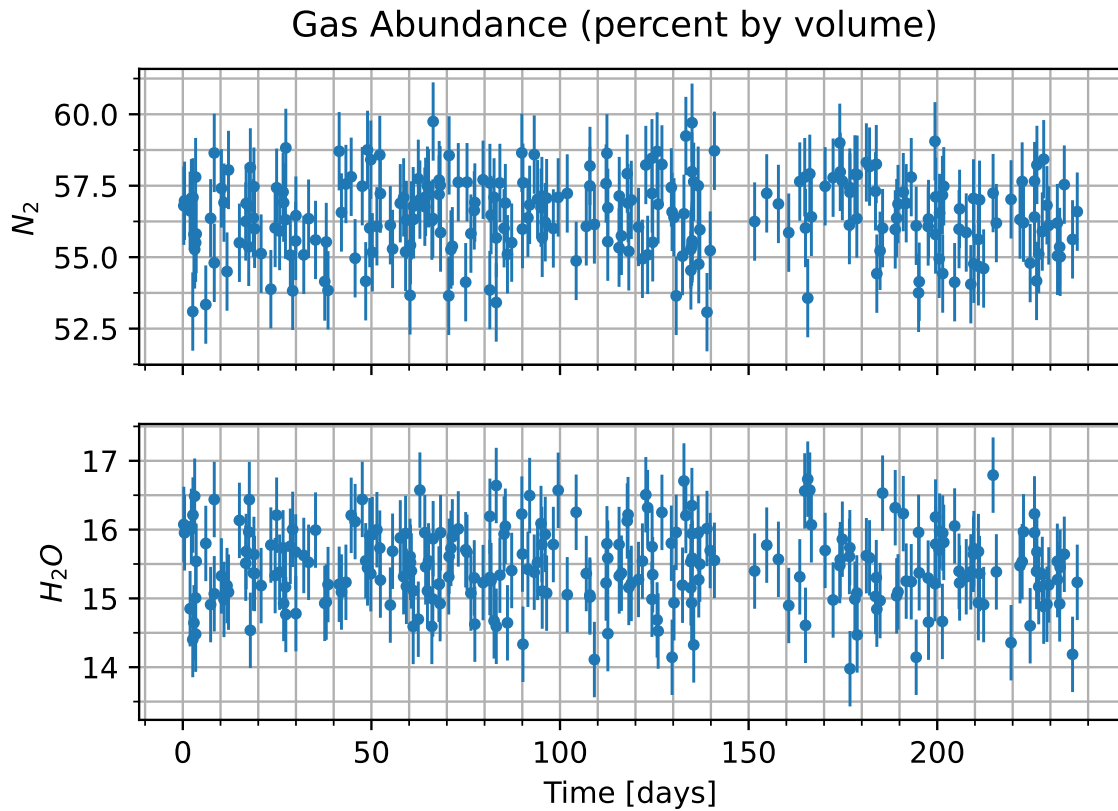


Figure 3: Concentration of various additional gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

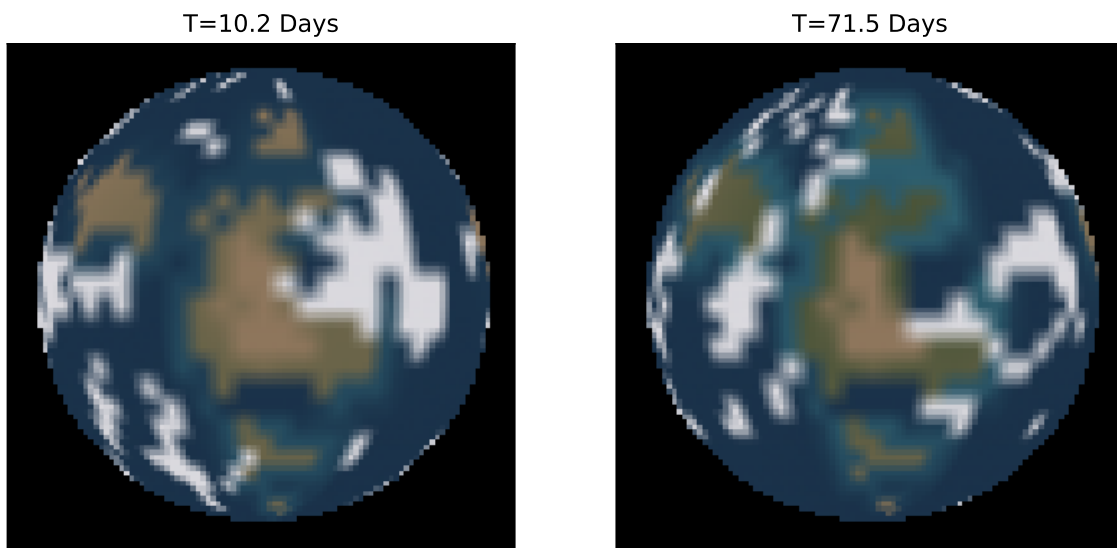


Figure 4: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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