

# AST251 Project 3 – Evaluating Claims of Extraterrestrial Messaging hassa609 Planet 1

Thursday 9<sup>th</sup> January, 2070

**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:

```
11001010101111000000001011110010110011010001111110  
10000110101110010111011101001000110000100011000111  
00110000000101000011111110111010100011011010011000  
1011000010100100110101010000100000010101111111000  
11000101000110011110101010111101001010010011010111  
0000010000100001011011110000011101111111000101001  
00000111011011101010111010111001010011010011110111
```

This signal was first noticed at UTC 2069-07-28/02:31.

## **Parameters of the candidate planet of origin and its host star**

Spectral Type	K
Stellar Luminosity (Solar Units)	0.0354
Stellar Mass (Solar Masses)	0.434
Distance to Star (lightyears)	34.0
Planet Mass (Earth masses)	1.6
Atmospheric Pressure (atm)	49.8

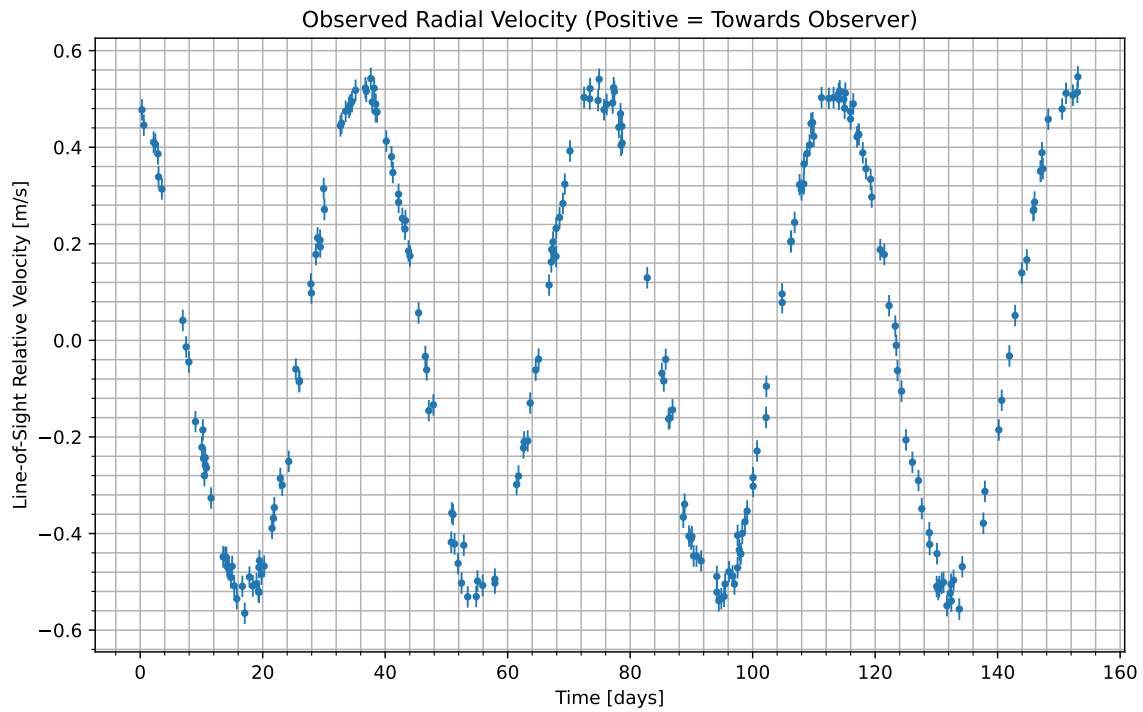


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2069-07-28/21:48. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

### Atmospheric composition of the candidate planet (percent by volume)

Molecule	Concentration
$N_2$	19.2
$CO_2$	49
$H_2O$	31.8

### Gas Abundance (percent by volume)

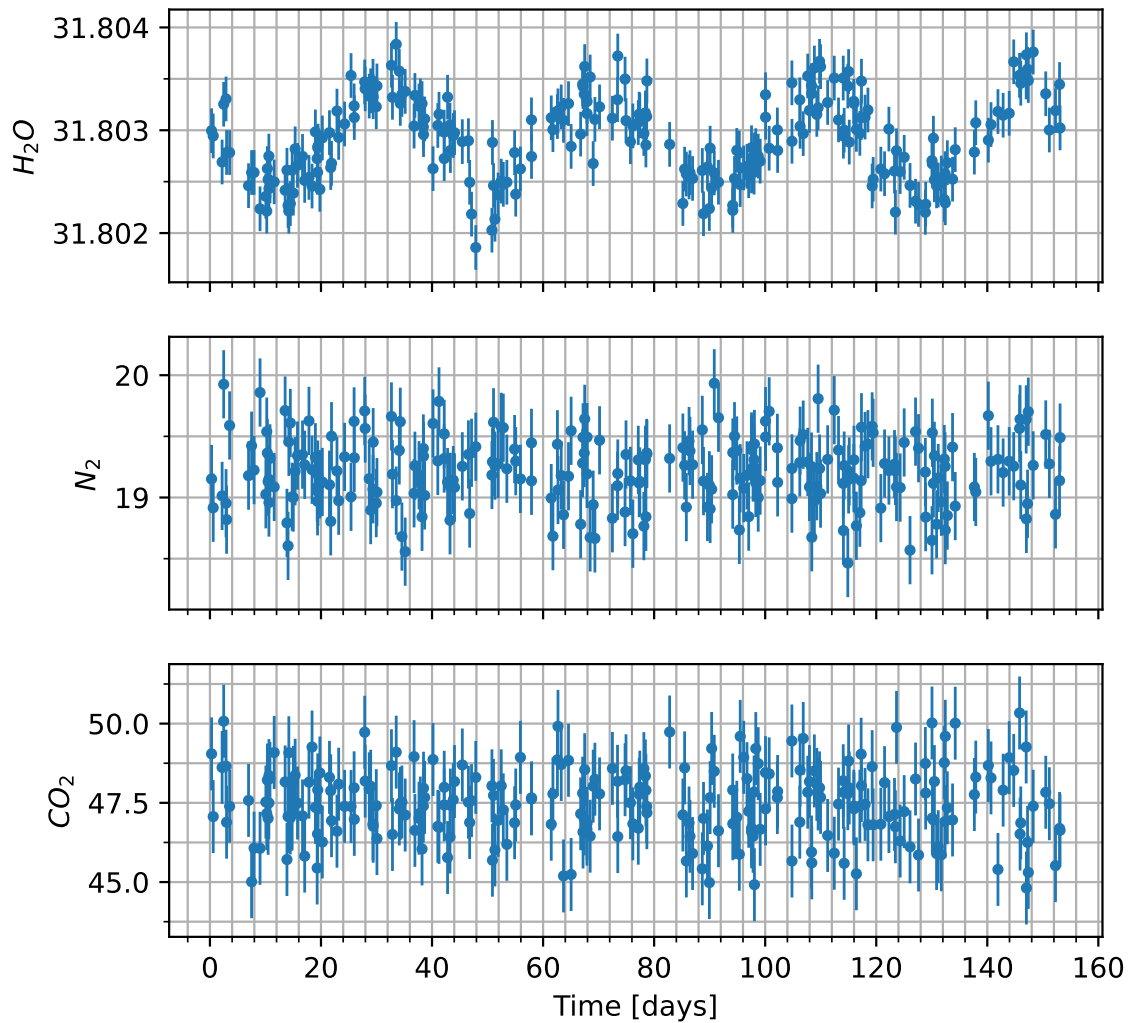


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

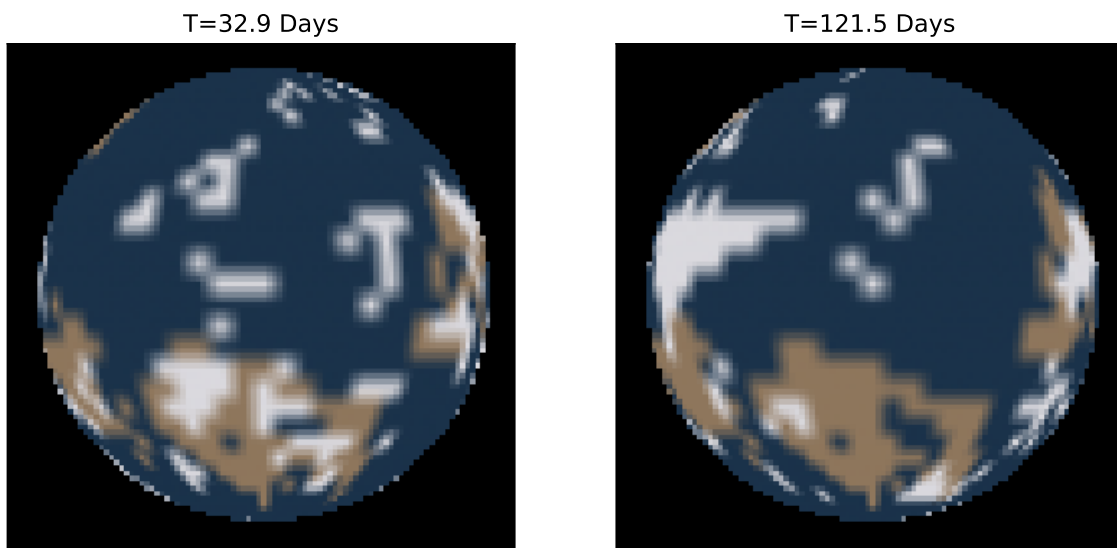


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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