

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

Thursday 30<sup>th</sup> 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 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:

```
1000111010101000110010001001110011000001010000011000001011011100101101001001
100100110010101010001100101100111110100100000010000000011001110000010110111
111011001010001011001111000111000100111111010100010100011010111111000001111
001010011001111100110110010100100001011101111101000101010011110101001110000
1100011000100001010000111100110011110010110111000011000011110100111001110110
1000011011001111100110100010011111100010110110101100001110100000001010010011
0110100100111001100001110110010000001100110110001010000011010110010101110100
0011011111101011100111100000100110001001001011111110101110001000101010110010
```

This signal was first noticed at UTC 2075-04-27/14:26.

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

Spectral Type	F
Stellar Luminosity (Solar Units)	2.66
Stellar Mass (Solar Masses)	1.28
Distance to Star (lightyears)	19.0
Planet Mass (Earth masses)	0.4
Atmospheric Pressure (atm)	5.8

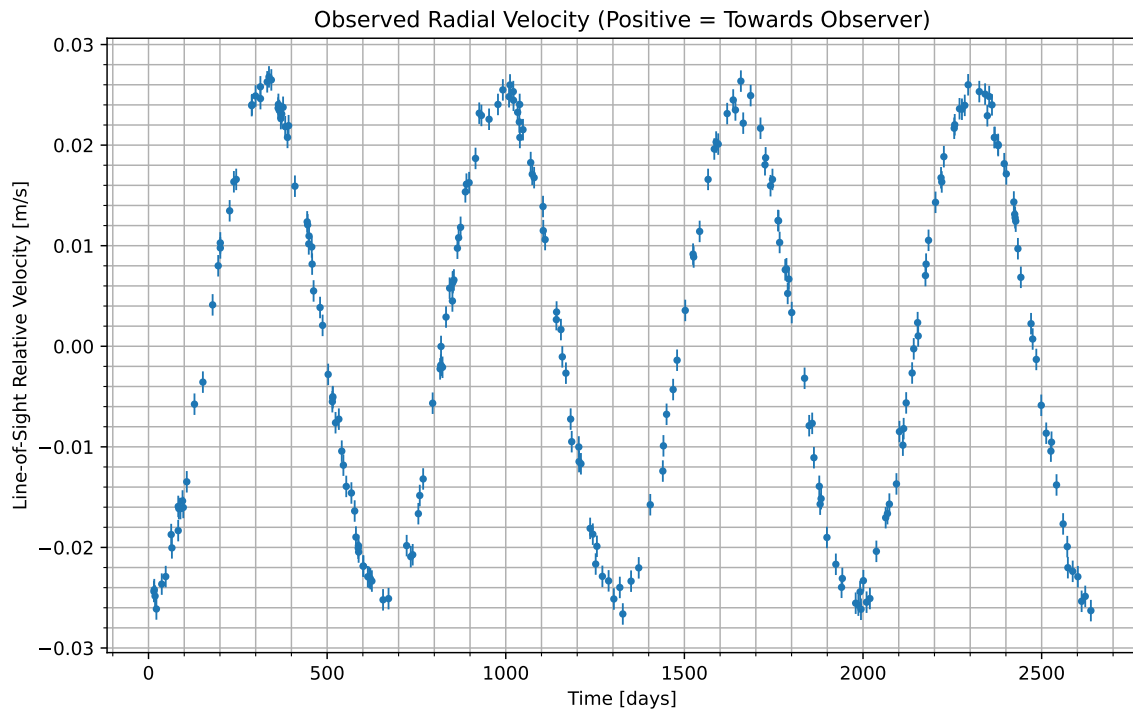


Figure 1: We have isolated the radial velocity of the host star due to the candidate planet. Data begins at UTC 2075-04-30/05:35. Positive values indicate the velocity at which the star is moving towards us; negative indicate the velocity at which it is moving away.

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

Molecule	Concentration
$N_2$	12.2
$CO_2$	61.1
$H_2O$	26.7

### Gas Abundance (percent by volume)

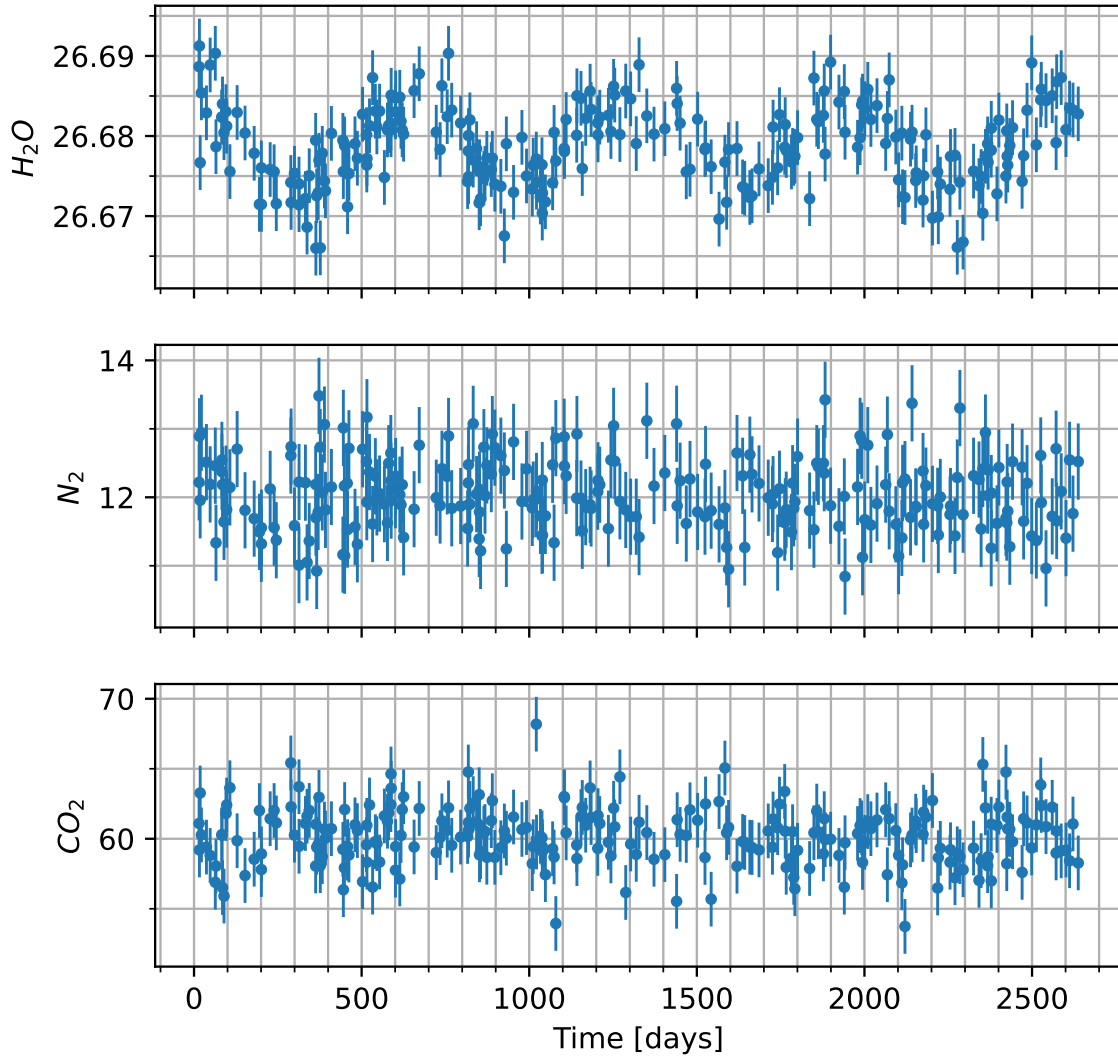


Figure 2: Concentration of various gases in the atmosphere of the candidate planet versus time. Note that the y-axis will usually only show the variation multiplied by some factor, shown in the upper left, and then added to some normal amount, also in the upper-left.

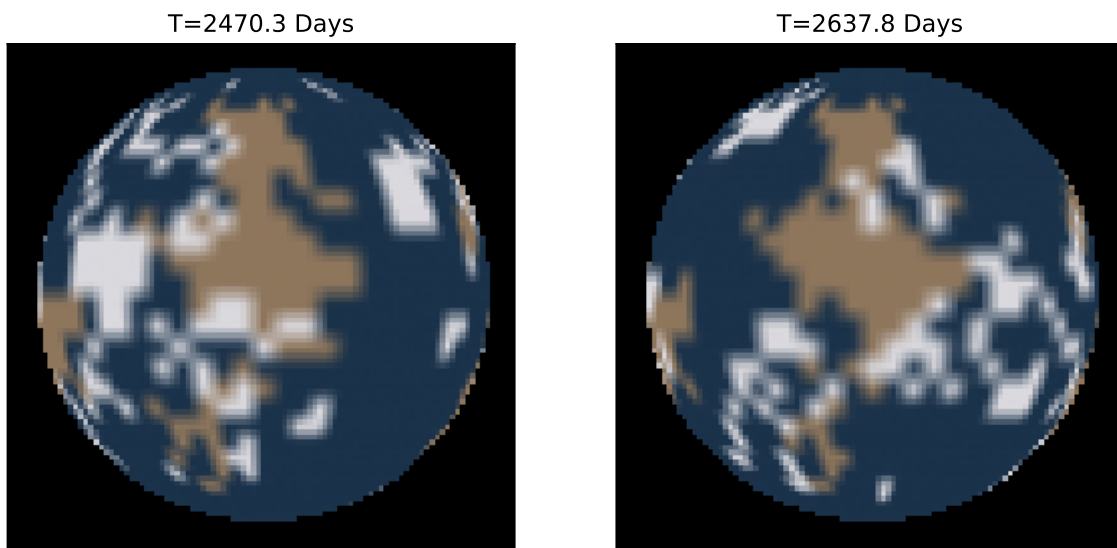


Figure 3: Maps of the surface of the candidate planet taken at two different times. Times are indicated above each image relative to the times shown in the radial velocity curve. Those maps are shown here. Tan areas indicate what we believe to be land, while blue-ish areas indicate what we believe to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