Explanation of Values in the PESO FlightComputer Log

timestamp

- The time in milliseconds when the current set of values were recorded.

temperature

- The temperature measured by the IMU. Divide this number by 65536 (2^{16}) to get degrees Celsius.

q_w, q_x, q_y, q_z

- 6-axis quaternion as reported by the IMU. Divide each value by 1073741824 (2^{30}) to obtain the normalized quaternion.

aa_x, aa_y, aa_z

- 3-axis accelerometer data as reported by the IMU in earth gravities.

gyro_x, gyro_y, gyro_z

- 3-axis gyroscope data as reported by the IMU in degrees per second. The gyroscope auto-calibrates after ~8 seconds of no movement.

time, date

- Coordinated Universal Time as reported by the GPS. Central Daylight Time is UTC -5.

lat, lon

- The latitude and longitude as reported by the GPS. The format is 3857.47N which represents 38° 57.47’ North.

speed

- The speed over the ground as reported by the GPS in knots.

alt

- Altitude at reported by the GPS in meters above mean sea level.