1. Read the attached data to your program. Write a linear interpolation code and obtain *V-I* color (ie., the difference between *V* and *I* magnitudes) at a given time. Calculate this for all the epochs where there is V-band data, and plot it vs time.

2. Sample the range $-1 \leq x \leq 1$ using 100 points and plot $f(x) = \frac{1 + \tanh(2\alpha x)}{2}$ for $\alpha = 1, 3, 8,$ and 10. See how the function behaves. It should approach a Heaviside step function.

Now, take $\alpha = 10$ case. Make another x array where the same range is sampled by 11 data points. Write your own Lagrange interpolation code and interpolate through this 11 data points. Overplot the interpolated function on the original. See how high order polynomial interpolation can cause oscillations.