Sun, Tides, and the BB2F

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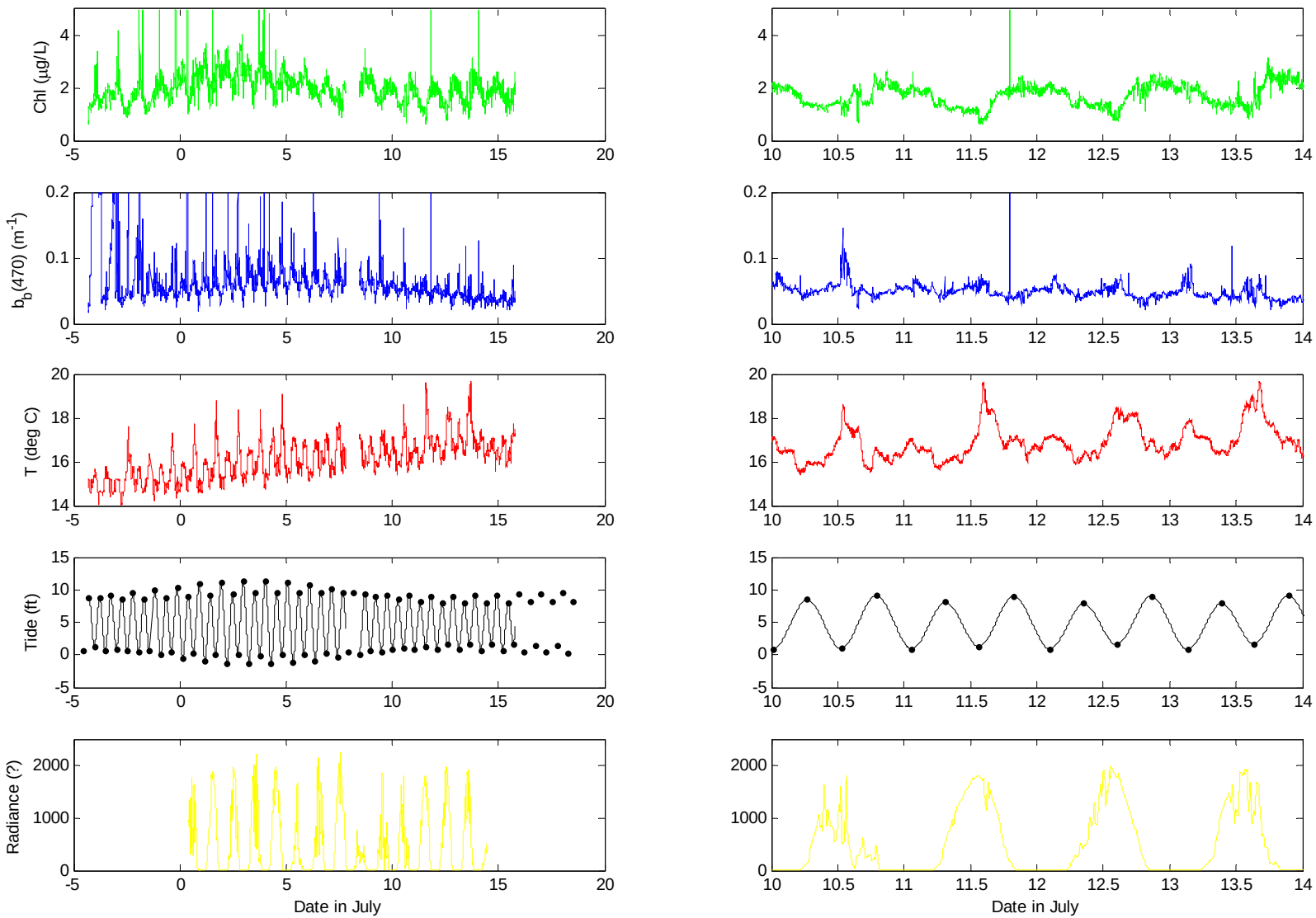
A bit about the BB2F

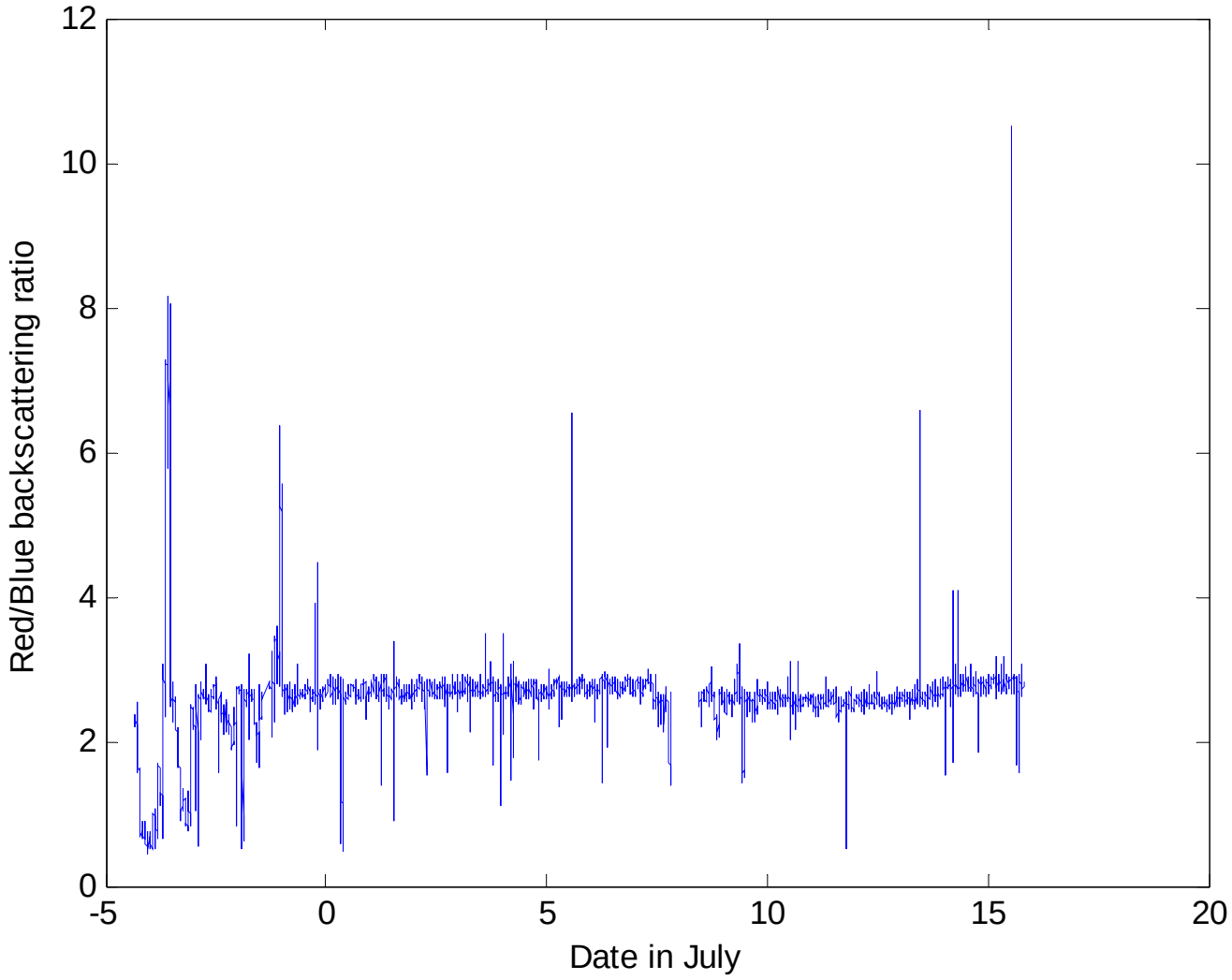
(as if you didn't already know)

- Chlorophyll *a* fluorescence
- Scattering at 117 degrees
  - 470 nm (blue)
  - 700 nm (red)
- Temperature
- ~3 weeks of data (almost) every minute

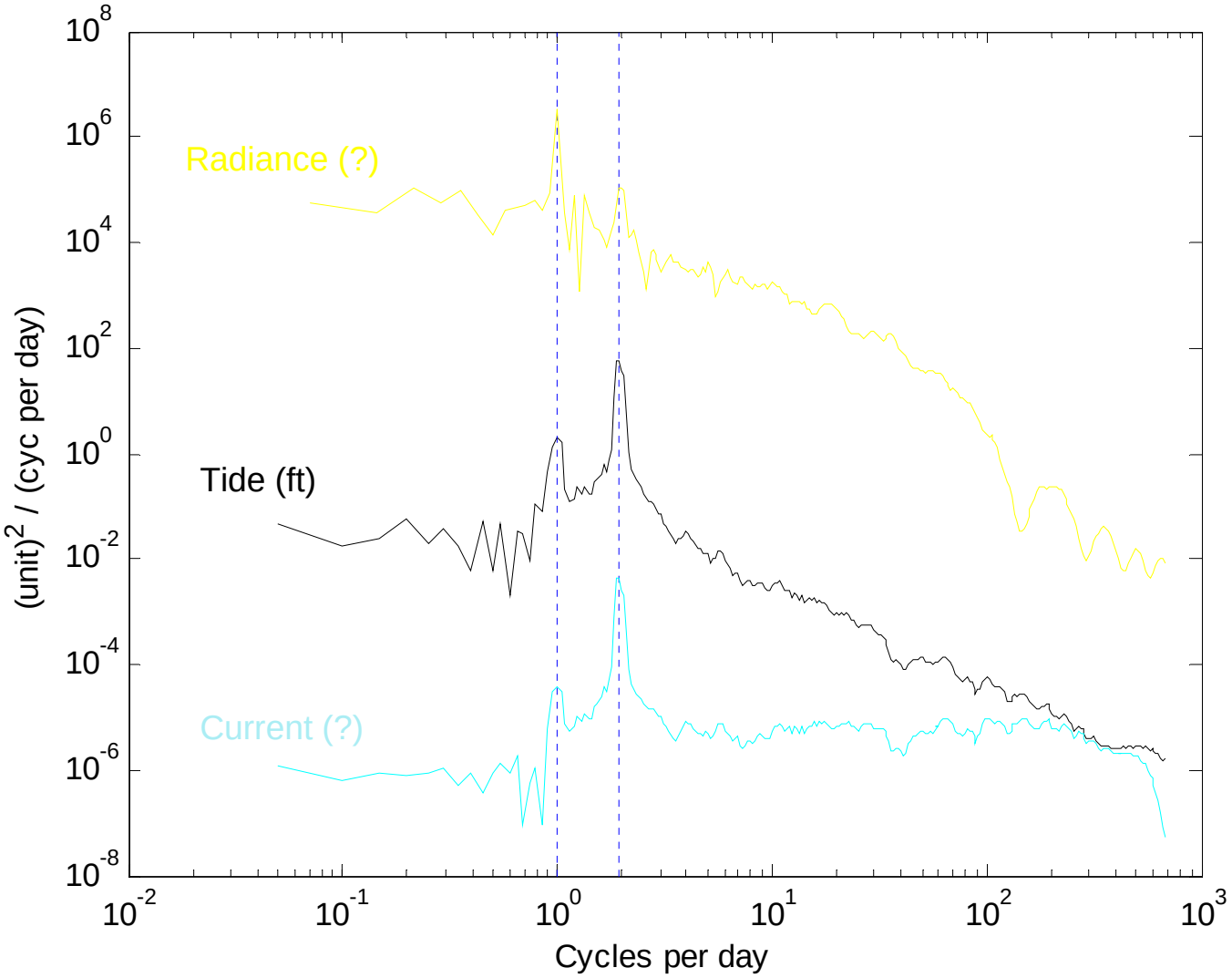
Time Series


Chl (µg/L)
$b_b(470)$ (m^{-1})
T (deg C)
Tide (ft)
Radiance (?)
Date in July
Date in July

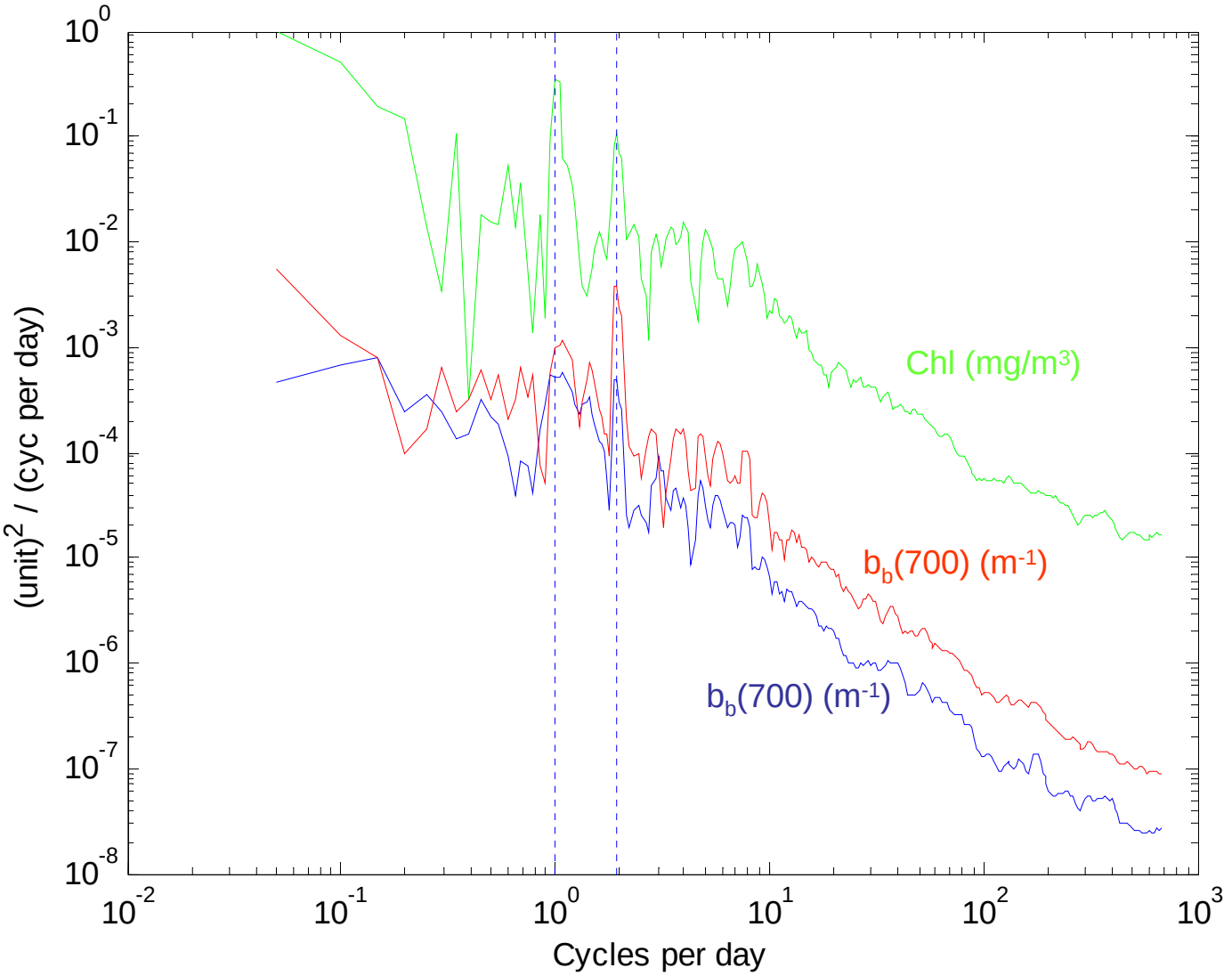
Blue scattering ~ Red scattering



Spectra of the Forcing

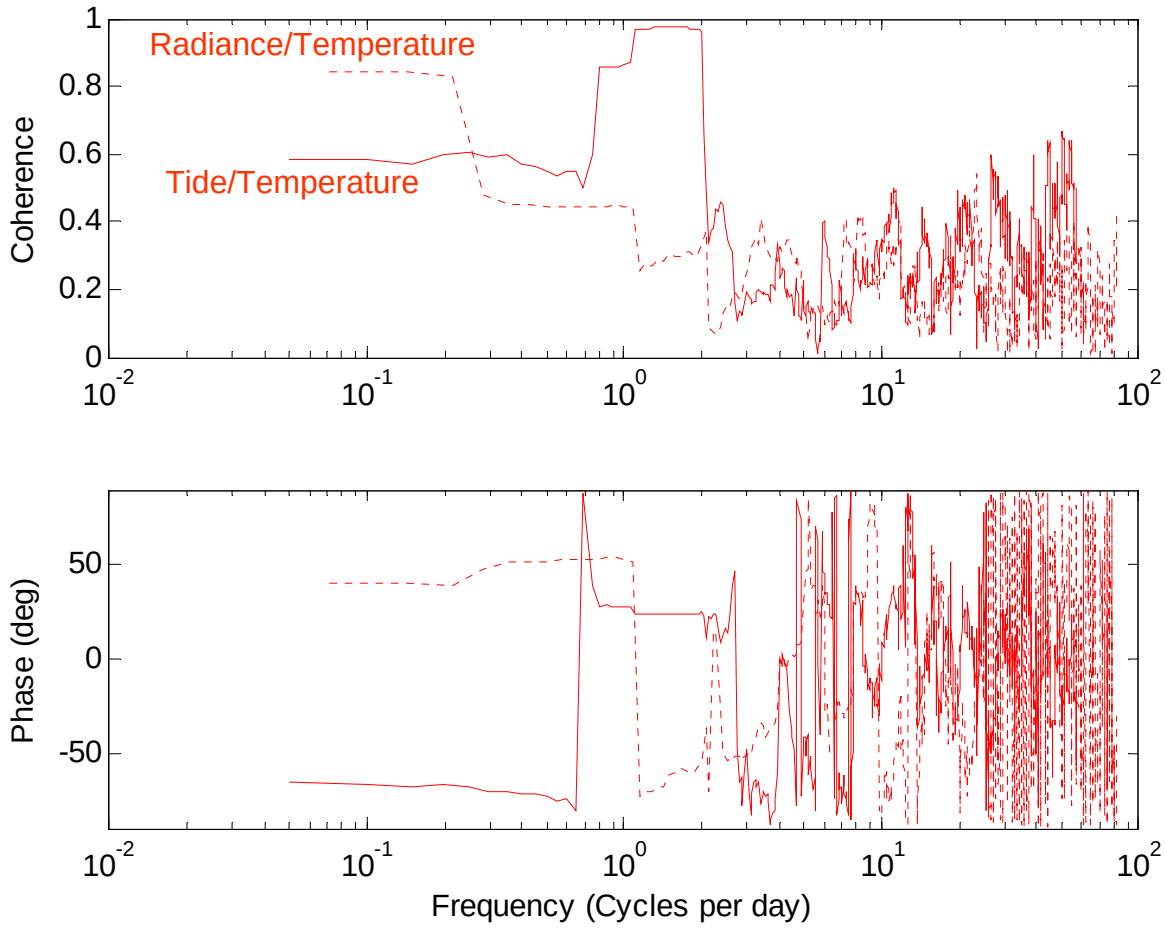


Spectra of the BB2F Data



Temperature, Tide, and the Sun

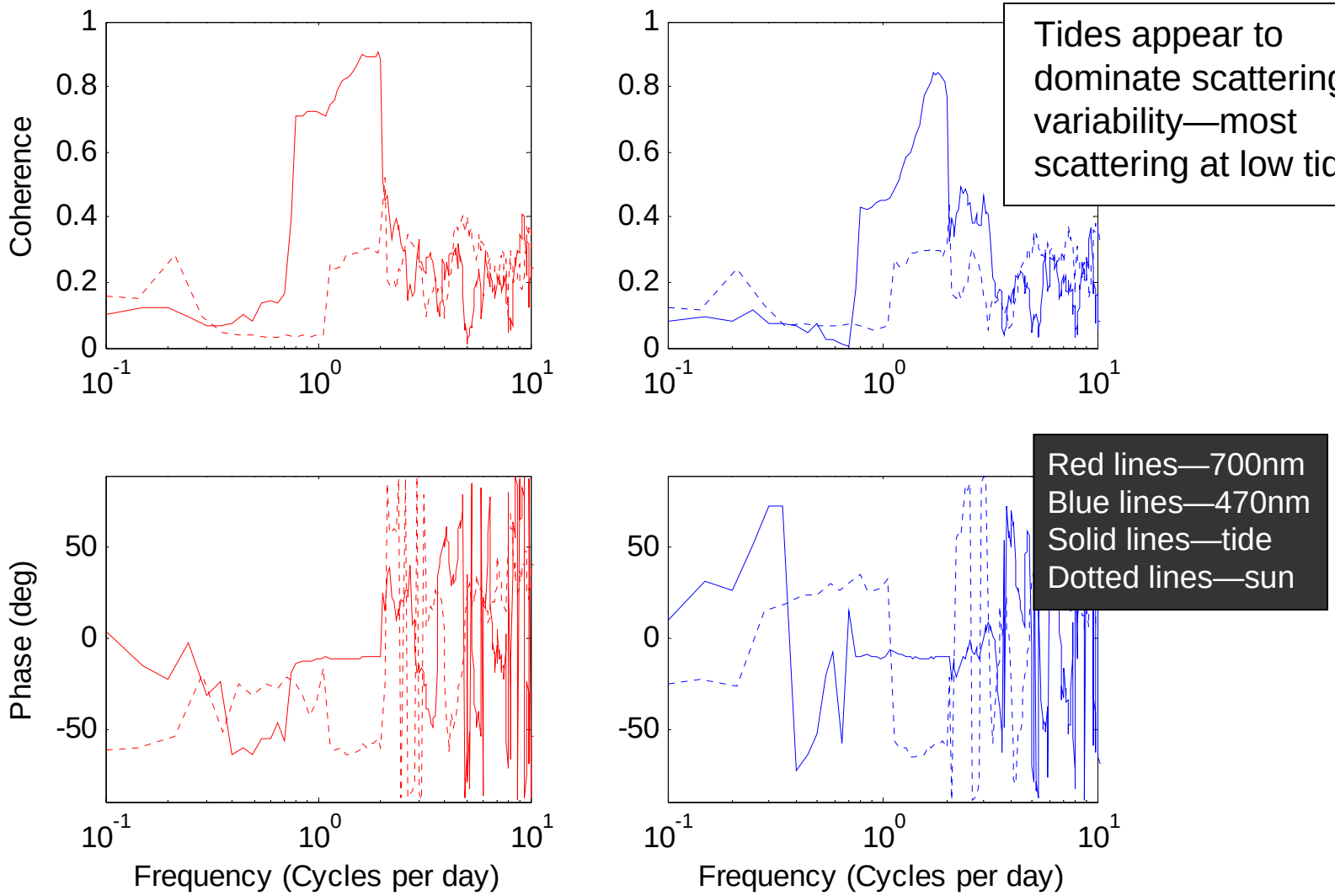
(and some confusing statistics)



At low frequencies (several days) temperature lags the sun by ~45 degrees.

Around the M2 tidal frequency temperature lags the tide by ~25 degrees. (Why?)

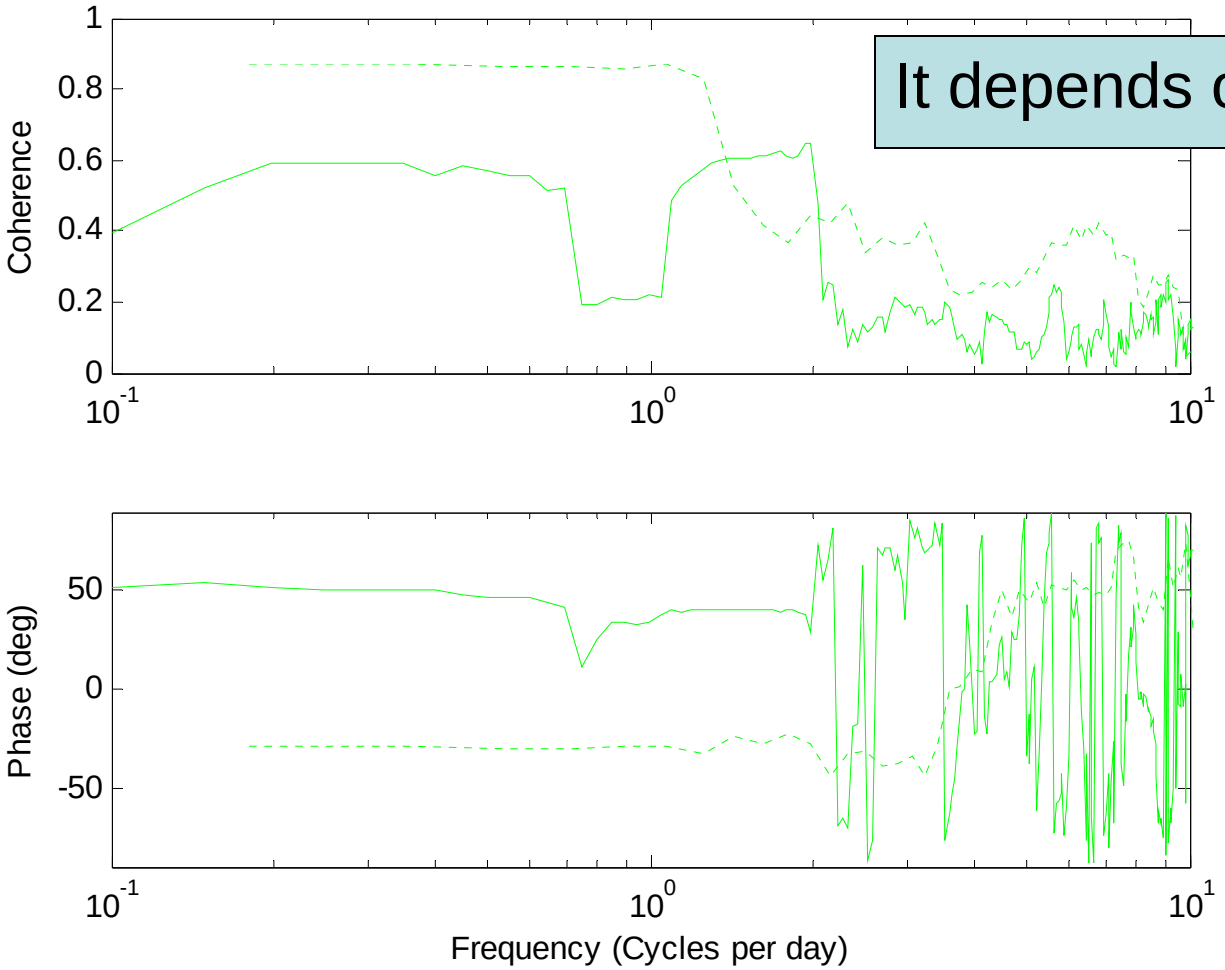
Back to the BB2F--Scattering



Tides appear to dominate scattering variability—most scattering at low tide

Red lines—700nm
Blue lines—470nm
Solid lines—tide
Dotted lines—sun

So What Drives Fluorescence Variability?



It depends on the timescale.

Conclusions:

- Sleep is good