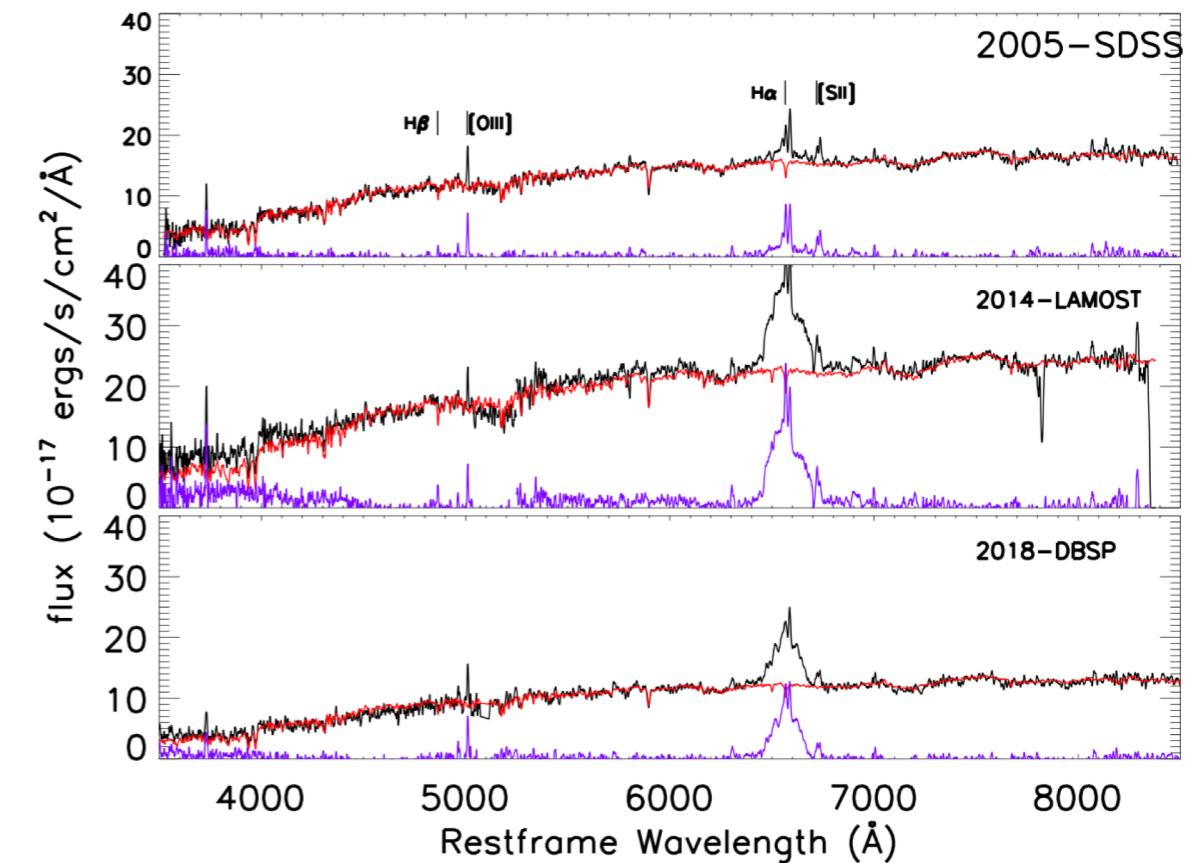
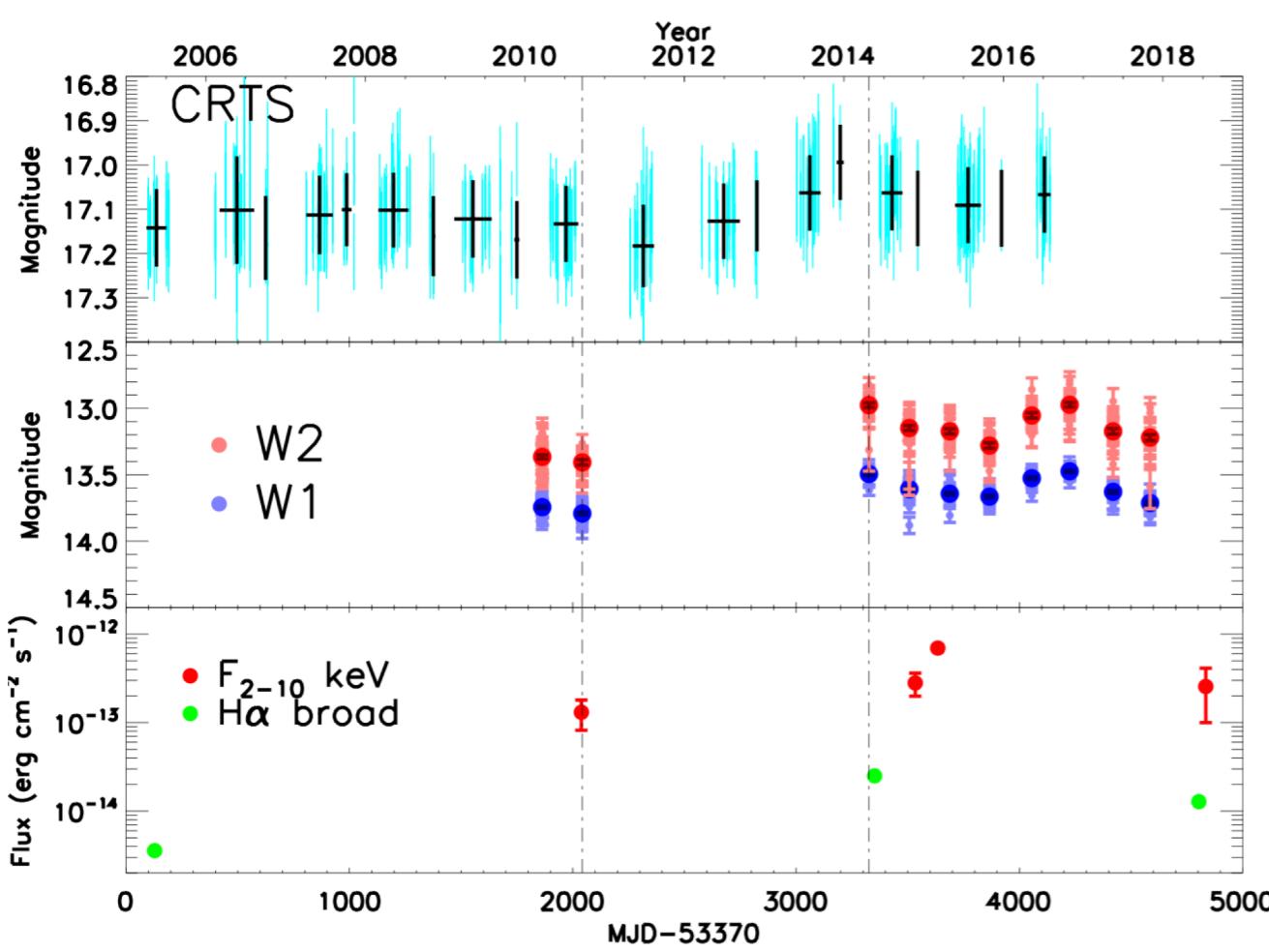


Changing-look Seyfert SDSS J1552+2737:

- ❖ Significant H α line variation on timescales of decade
- ❖ Significant variations in infrared, optical, and X-ray



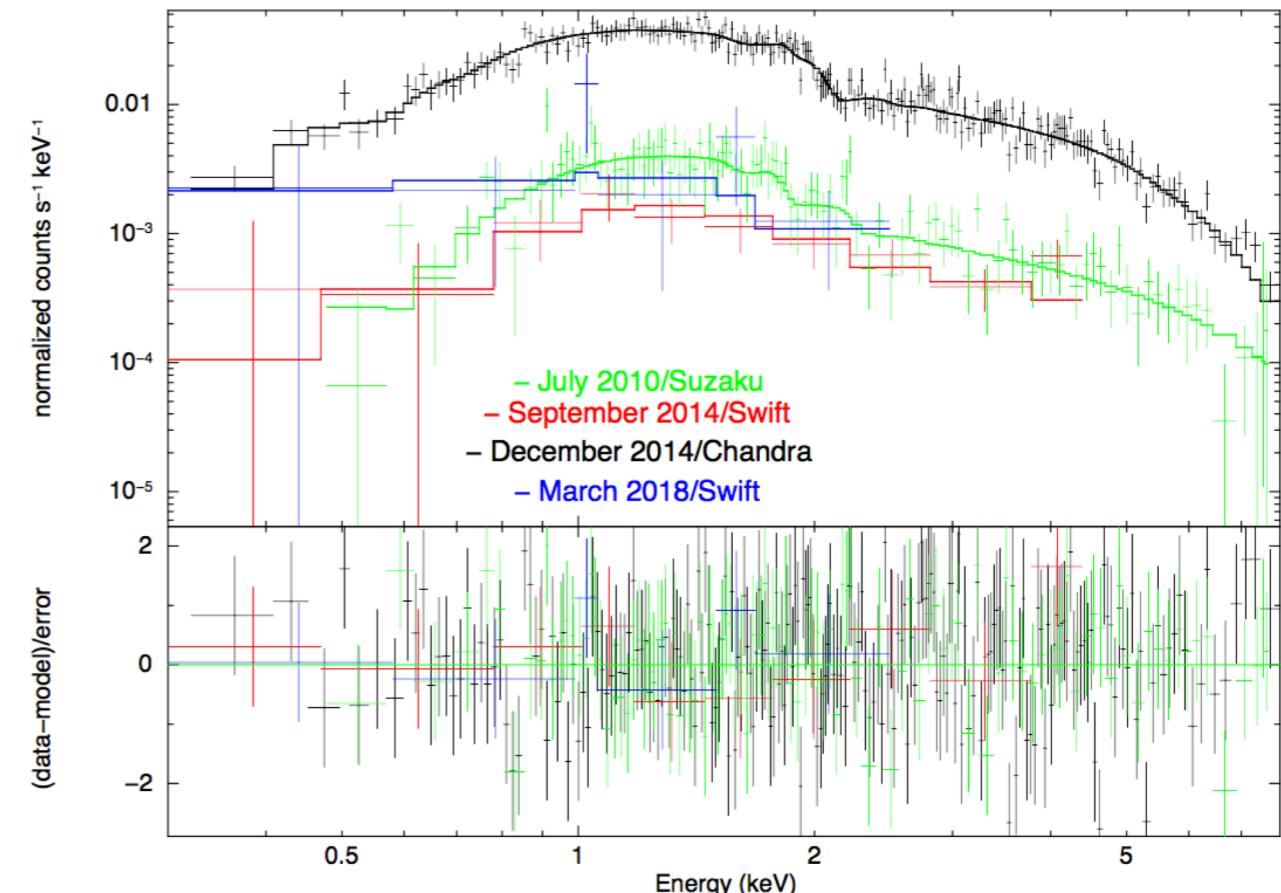
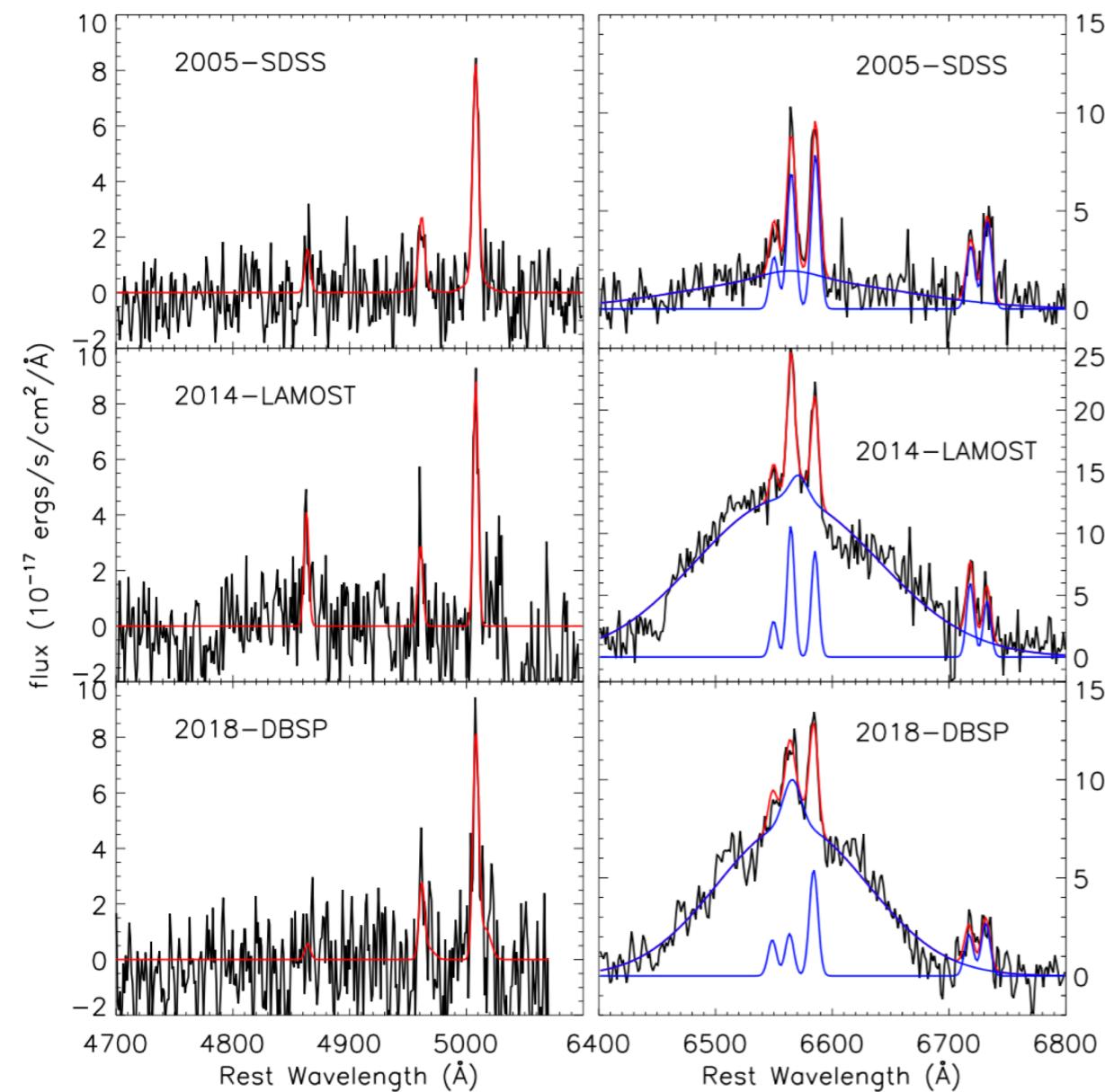
Observed amplitude and timescales in optical and infrared are **against the obscuration variation scenario**

Our results prefer that:

- Variations of SDSS J1552 are dominated by the intrinsic variation of accretion disk

More detail

- Broad H α varied a factor of 6
- Non-detection of broad H β



Five times variation in 2-10 keV flux

$$N_H \sim 10^{21} \text{ cm}^{-2}$$

un-detection of broad H β maybe due to obscuration

Epoch	$E(B-V)_{NLR}$	$E(B-V)_{BLR}$
2005-SDSS	0.71 ± 0.26	> 0.23
2014-LAMOST	0.26 ± 0.62	> 1.63
2018-DBSP	0.59 ± 1.64	> 1.65

Discussion

Argument against obscuration of variation:

- **Amplitude** --- $\Delta W \sim 0.5$ mag, then $\Delta V \sim 11$ mag required by change of obscuration with assumed extinction model, not agree with light curve
- **Timescale** ---- mid-infrared variation indicate size of obscurer comparable to torus, cross timescale longer than observed

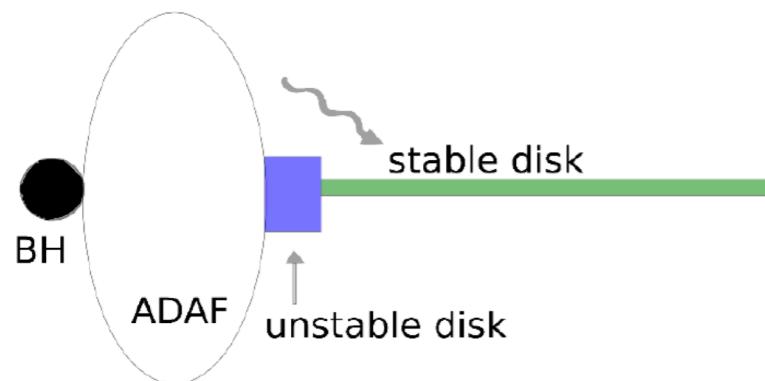
$$R_{\text{sub}} = 0.5 L_{46}^{0.5} (1800K/T_{\text{sub}}) \text{ pc} = 0.098 \text{ pc}$$

$$T_{\text{cross}} \sim 15.8 \text{ yr}$$

Accretion physics

$$L/L_{Edd} \in 0.001 \sim 0.04$$

Central region maybe not standard thin disk, could be advection-dominated accretion flow (**ADAF**)



- When **Eddington ratio** \sim a few percent
- ❖ Temporary appearance/disappearance of warm corona associated with observed changing-look phenomena (Noda & Done 2018)
 - ❖ Radiation pressure instability in a narrow zone between outer cold gas-dominated disk and inner hot ADAF lead to out-burst (Sniegowska & Czerny 2019)