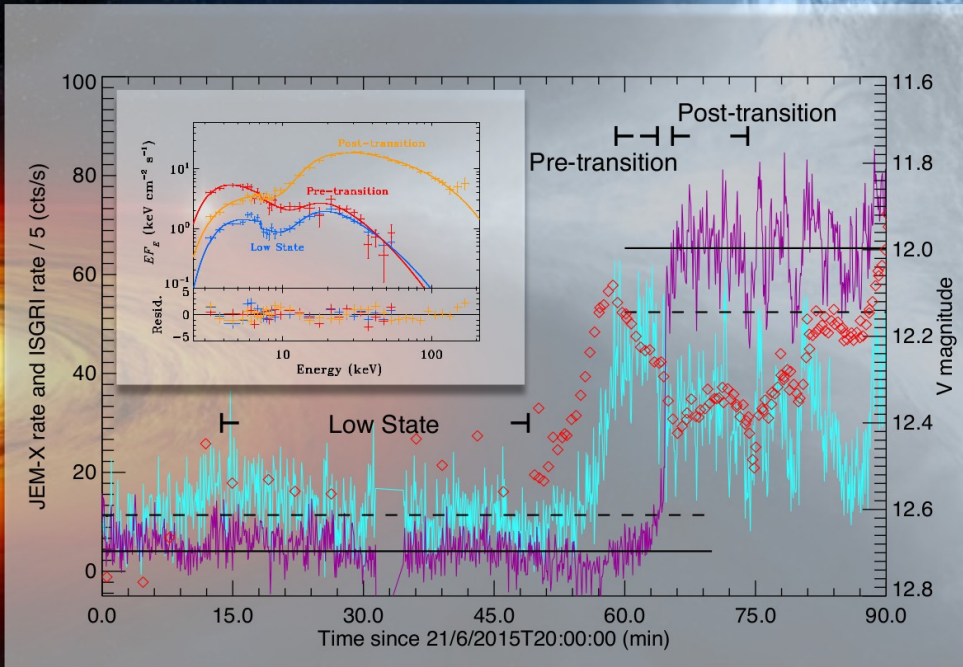


Black hole V404 Cyg wakes up from a nap badly out of sync



V404 CYGNI - GS2023+338

CREDIT: J.J.E. KAJAVA (CAB, CSIC-INTA) / INTEGRAL

Further reading:

[INTEGRAL PICTURE OF THE MONTH](#)

V404 Cyg is an X-ray binary system where a black hole is feeding material from its low-mass companion star. In June 2015 it had a spectacular feast, which resulted in X-ray fireworks that was observed by ESA's INTEGRAL observatory. The in-falling gas heated up to hundreds of millions of degrees as it approached the black hole, causing V404 Cyg to shine brighter than a million Suns. At the same time its black hole spewed out matter in form of winds and rapidly moving jets. The X-ray brightness of V404 Cyg varies much more erratically compared to other similar feeding black holes, having bright X-ray flares that are sandwiched by dimmer periods in its X-ray light curve.

By utilizing INTEGRAL's CAB-led optical monitor camera (OMC), the X-ray monitor and the gamma-ray imager we studied how V404 Cyg brightened up from one of these dim periods. We found that the short nap in between the brighter flares ended badly out of sync. The optical and soft X-ray brightness rose relatively gradually at first, and a few minutes later the hard X-ray brightness jumped up in a matter of about 15 seconds. The rapid brightness variation was accompanied with a spectral transition that occurred much faster than seen in most of black-hole binary X-ray transients. The transition seen could be related to a change in the wind structure, rather than the manner in which the black hole was being fed.