

S28a AGNからのシリケート放射 — COMICSによるNGC 3998の撮像

友野 大悟 (国立天文台)、Mario Schweitzer、Eckhard Sturm、Dieter Lutz (MPE)

The unified model of AGNs (Antonucci, 1993) predicts a thick dusty torus around the black hole. Observational differences of Type 1 and Type 2 AGNs are explained with the dusty torus: Type 1 AGNs are viewed with the torus face-on while Type 2 AGNs are obscured by the edge-on dusty torus. Various simulations (e.g. Pier & Krolik, 1992) predict emission and absorption of the $9.7 \mu\text{m}$ silicate feature from Type 1 and Type 2 AGNs, respectively.

In contrast to detections of the absorption feature from Type 2 AGNs (e.g. Roche et al., 1984), the emission feature from Type 1 AGNs had only been observed recently. With the Spitzer Space Telescope, Sturm et al. 2005 reported the 10 and $18 \mu\text{m}$ silicate emission features in the low-luminosity Liner NGC 3998.

The COMICS images of NGC 3998 at $8.6 \mu\text{m}$ and $11.6 \mu\text{m}$ shows an extended MIR emission source. With the identical spatial extensions at both of the wavelengths and the silicate emission feature seen in the Spitzer spectrum, we concluded that the silicate emission is indeed extended, which places new constraints on the origin of the silicate emission in the torus or other circumnuclear regions.