INFRARED SPACE OBSERVATORY

- Pointed followon mission to IRAS
- 0.6m telescope , diff-lim for $\lambda > 10\mu$
- European Space Agency mission
- NASA, ISAS involvement
- 1995 launch, 18 month life
- Elliptical synchronous orbit, 1000 x 70000 km x5 deg; 16 hr/day outside belts
- Pointing: 12" absolute, 3" jitter
- Orbit precesses little, strong Earth, Moon, Sun constraints so sky hole of 3h in RA
- Fall 1995 window: hole in Ori
- Spring 1996 window: hole in Sgr

ISO INSTRUMENTS

- ISOCAM
  - 32x32 array, 2.5-17μ
  - CVF R=10
- ISOPHOT
  - PHT-P, 3-120 μ broad band photometry
  - PHT-C100, 50-120 μ, 3x3 array
  - PHT-C200, 120-240 μ, 2x2 array
  - PHT-S, 2.5-12 μ gratings, R=90
- SWS
  - 2.4-45 μ, R=1000-2000
- LWS
  - 45-200 μ, R=200

LWS Team Extragalactic Core Program

- Howard Smith (SI-NASM), Matt Greenhouse (NASM), Jackie Fisher (NRL), Matt Malkan (UCLA), Jonathan McDowell (SAO), Gordon Stacey, Luigi Spignoglio
- Galactic Center, Normal Galaxies, NGC 1275, IR Galaxies, AGN
- Only brightest 100 mu objects
- Spatially resolved spectral maps of M82, M51, NGC 891, IC 342 and Galactic Center
- R=200 far IR spectra of Arp 220, NGC 253, Cen A, IRAS galaxies

LWS AGN core program

- Full scans of bright objects (3C 273, NGC 1068, etc)
- Continuum turnover shape (Mkn 876, PG 1211+143)
- IR lines: [C II] 157.7, [O I] 63.2, [N II] 121.9
- Molecular lines: CO 163, 119; H2O 100, 179; OH 56, 199

Science goals

- Emission line ratios to give starbust/AGN discriminator
- Nature of IR continuum
- Kinematics of nuclear gas
- Coronal emission line region (with SWS)
- Hidden BLRs
- Molecules in thick tori

NGC1068
NGC 4151
I Zw 92
Mkn 551
NGC 2992

3C 273
E1821+643
PG1211+143
PHL 909
Mkn 509
I Zw 1
PG1613+658
Fairall 9
3C 345
PG1351+640