

# Revealing the ISM

Ay 20, Fall 2019, Lecture 19

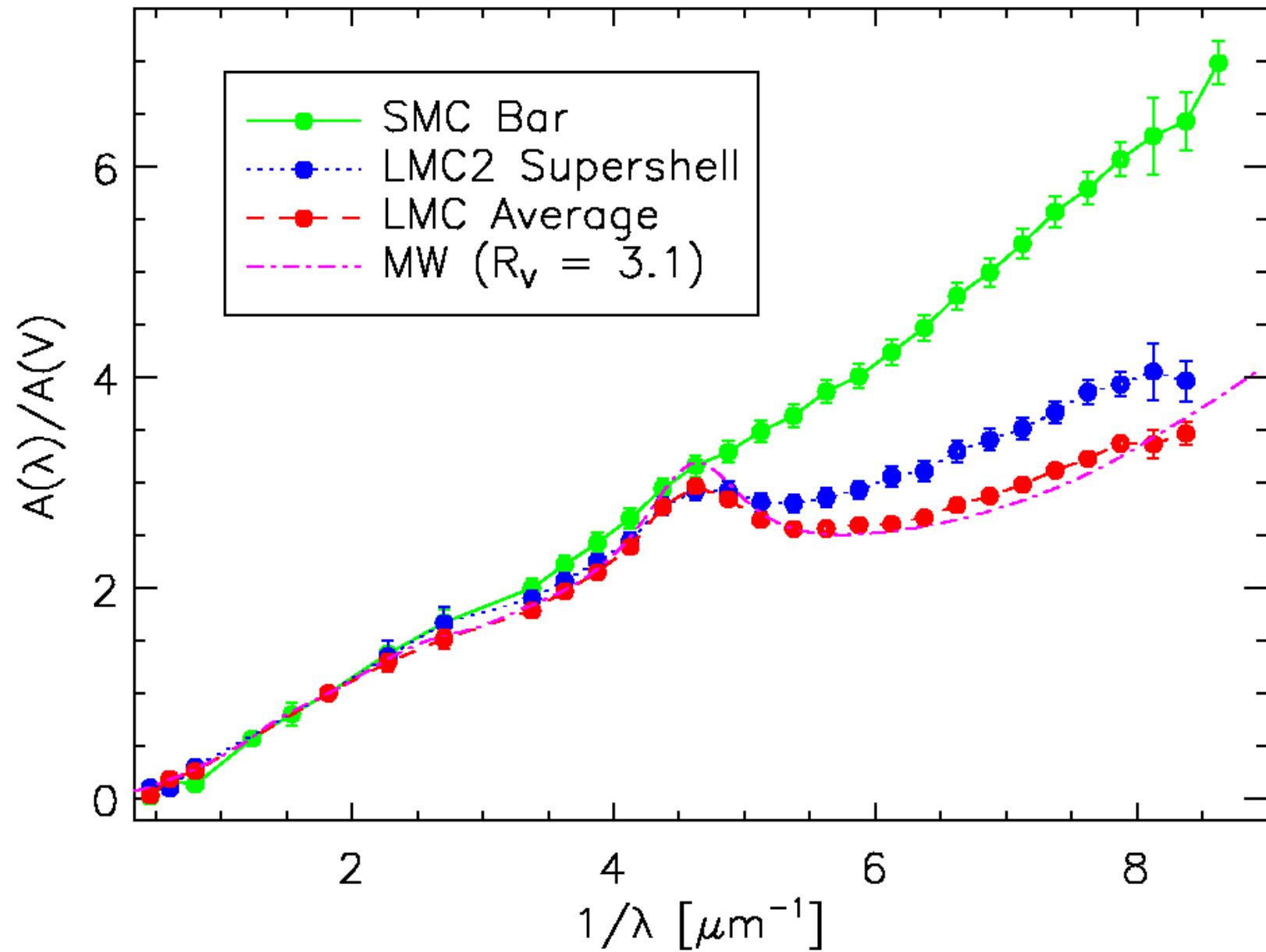
*Vikram Ravi*



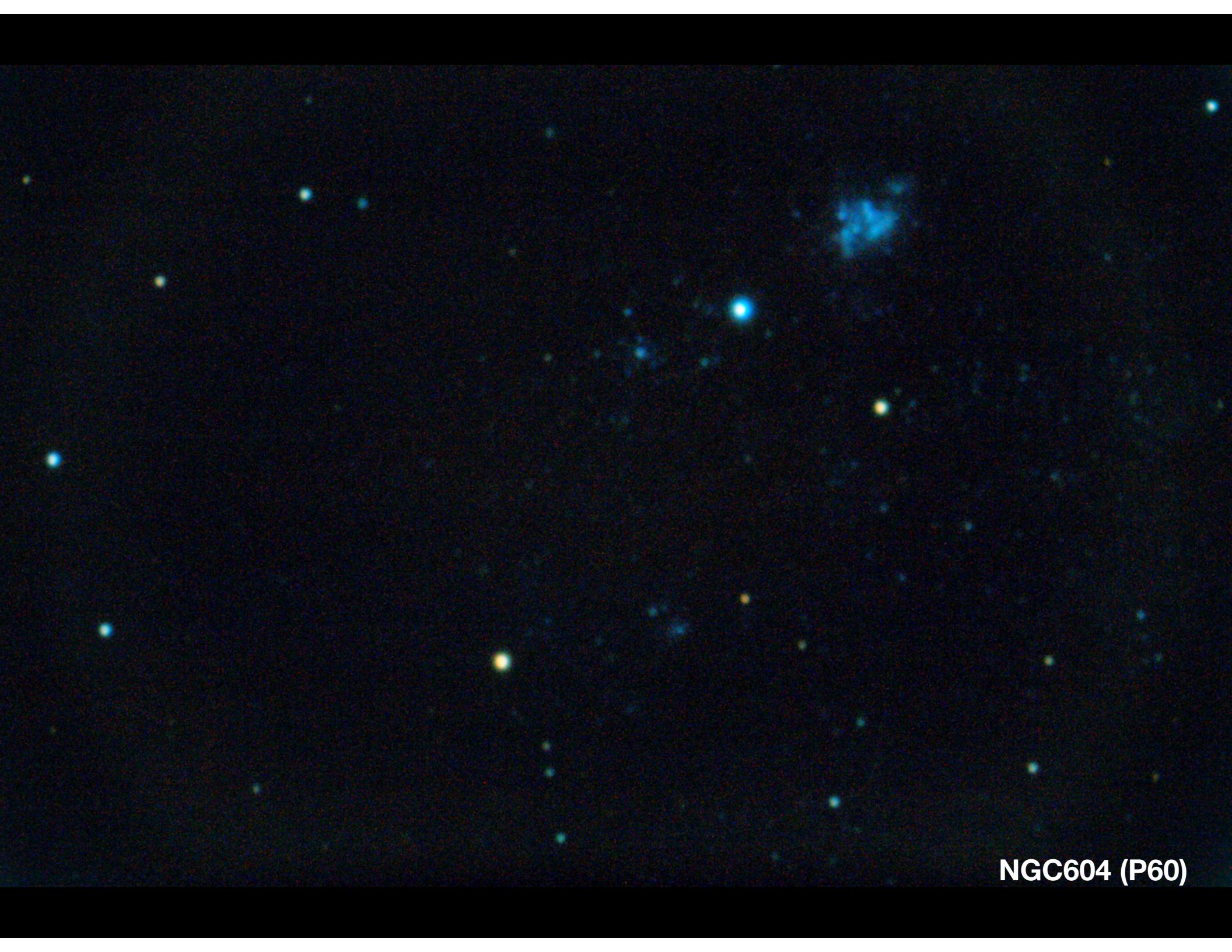
**M31 core (P60)**



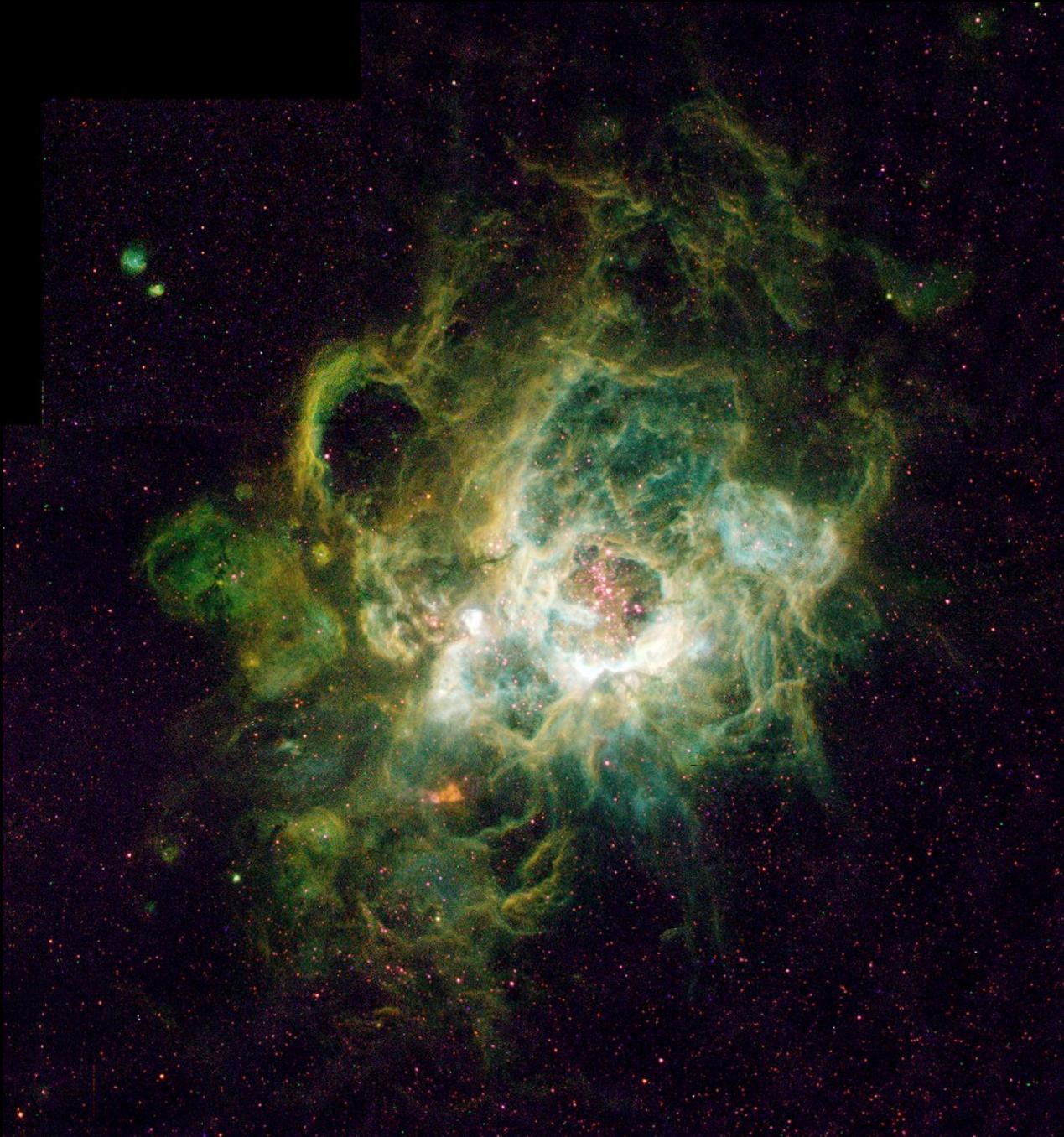
Wikipedia



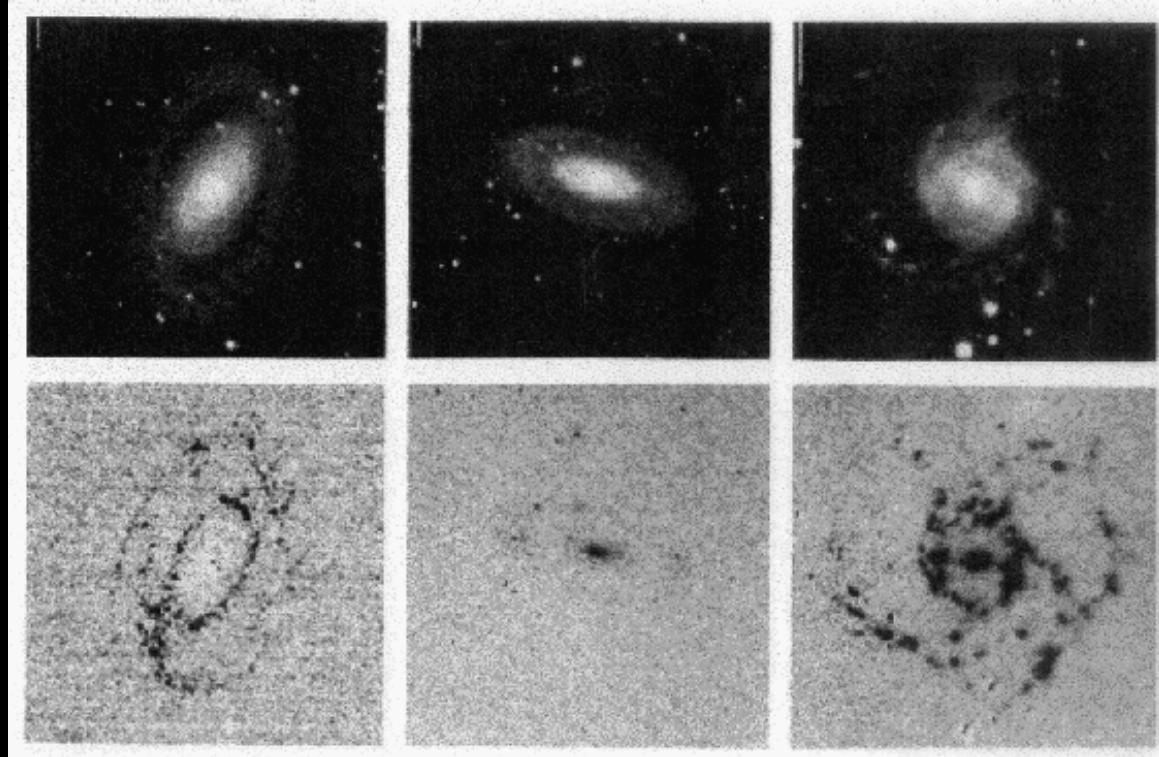
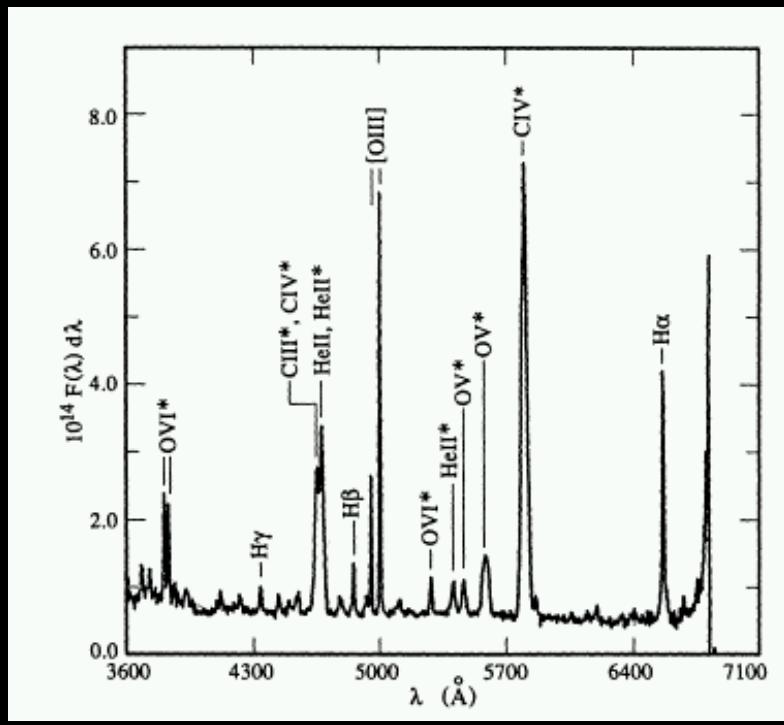
<https://vimeo.com/335071954>



**NGC604 (P60)**



**NGC604 (NASA/ESA/STScI - HST)**



Species	Level	Wavelengths	Excitation energy	Critical density
[N II]	${}^1D_2^e$	6548, 6583 Å	1.90 eV	$6.6 \times 10^4 \text{ cm}^{-3}$
[O III]	${}^1D_2^e$	4959, 5007 Å	2.51 eV	$6.8 \times 10^5 \text{ cm}^{-3}$
[O II]	${}^2D_{5/2}^o$	3729 Å	3.33 eV	$3.4 \times 10^3 \text{ cm}^{-3}$
	${}^2D_{3/2}^o$	3726 Å	3.33 eV	$1.5 \times 10^4 \text{ cm}^{-3}$
[Ne V]	${}^1D_2^e$	3346, 3426 Å	3.62 eV	$1.3 \times 10^7 \text{ cm}^{-3}$

C. Flynn, C. Hirata