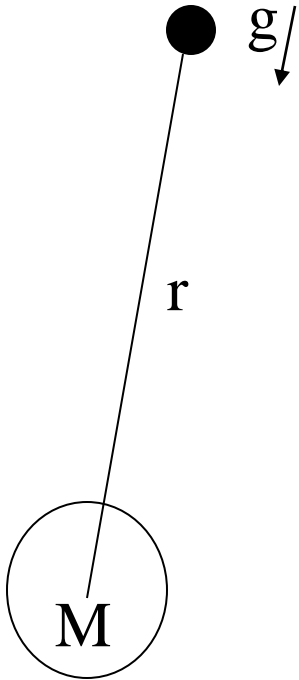


AGA0101

2.3 Buracos Negros Gigantes

- A controvérsia do redshift
 - A luminosidade e o volume
 - Modelos alternativos
-
- Zeldovich (1964)
 - Salpeter (1965)
 - Lynden-Bell (1969)
 - Shakura e Sunyaev (1973)

Raio de Schwarzschild

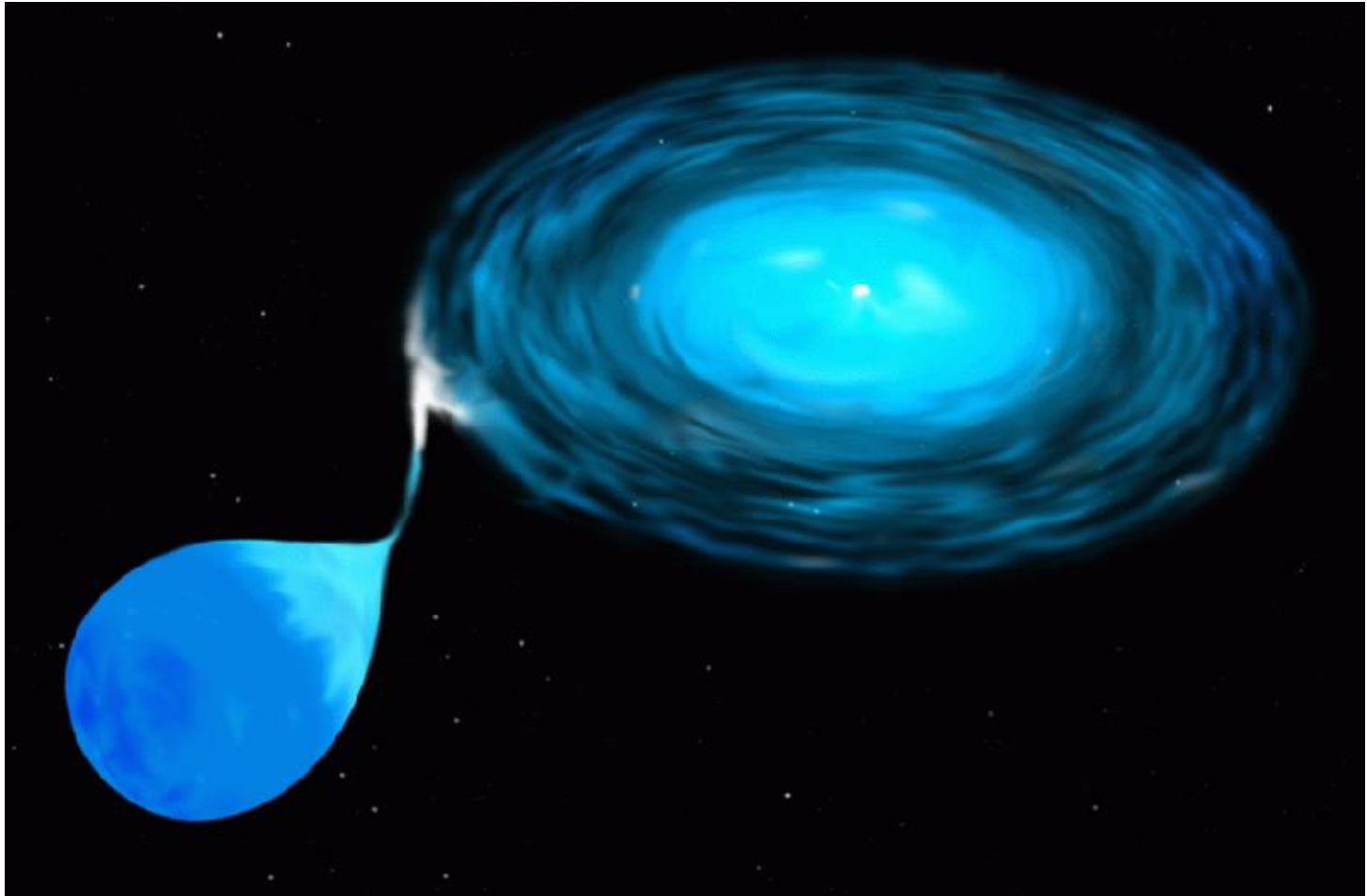


$$g(r) = \frac{GM}{r^2} \frac{1}{\sqrt{1 - \frac{2GM}{rc^2}}}$$

$$\text{Se } \frac{2GM}{rc^2} = 1 \quad , \quad r_S = \frac{2GM}{c^2}$$

Momento angular de buracos negros: Schwarzschild x Kerr

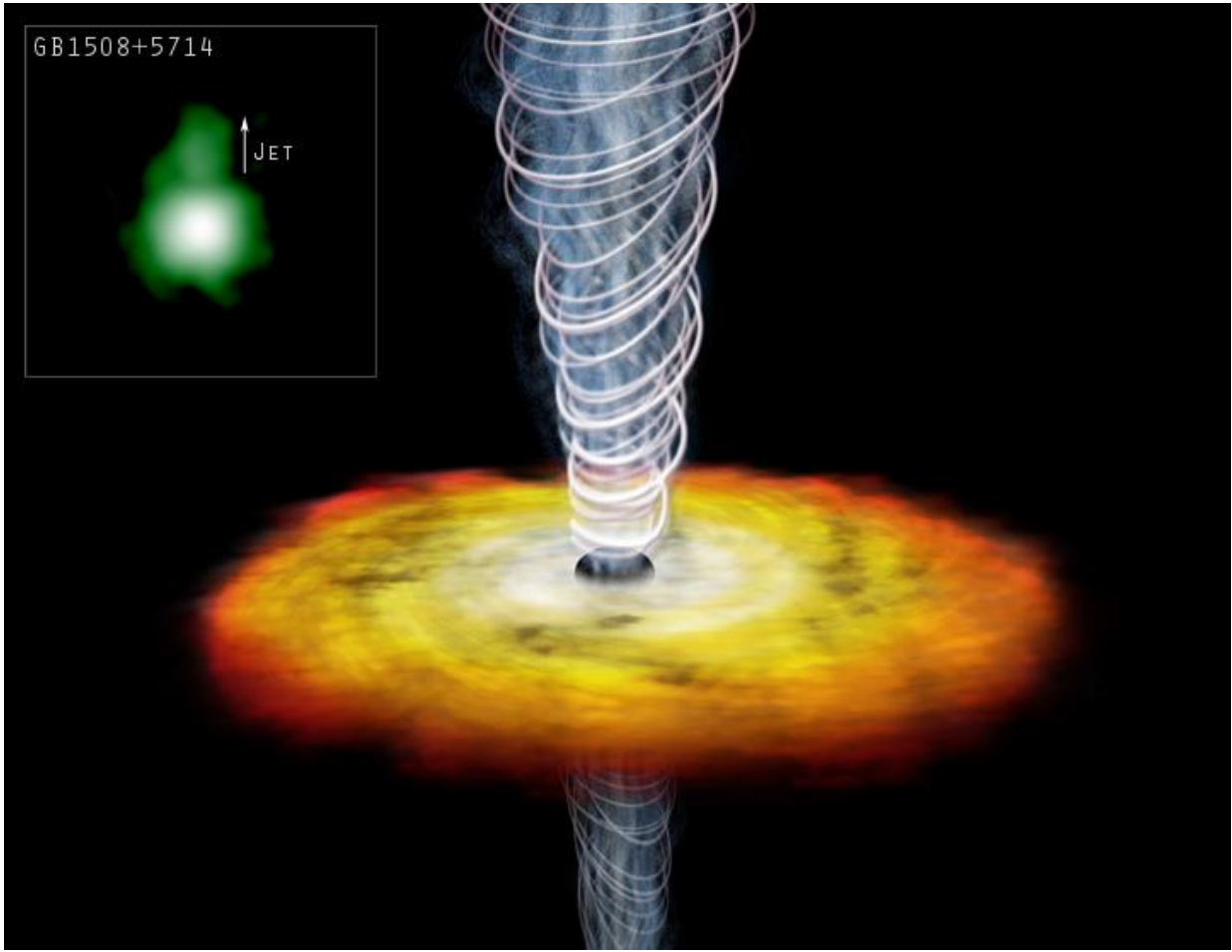
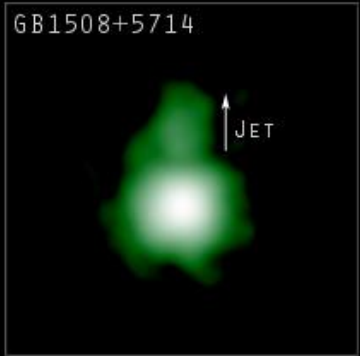
Massa, carga elétrica e momento angular



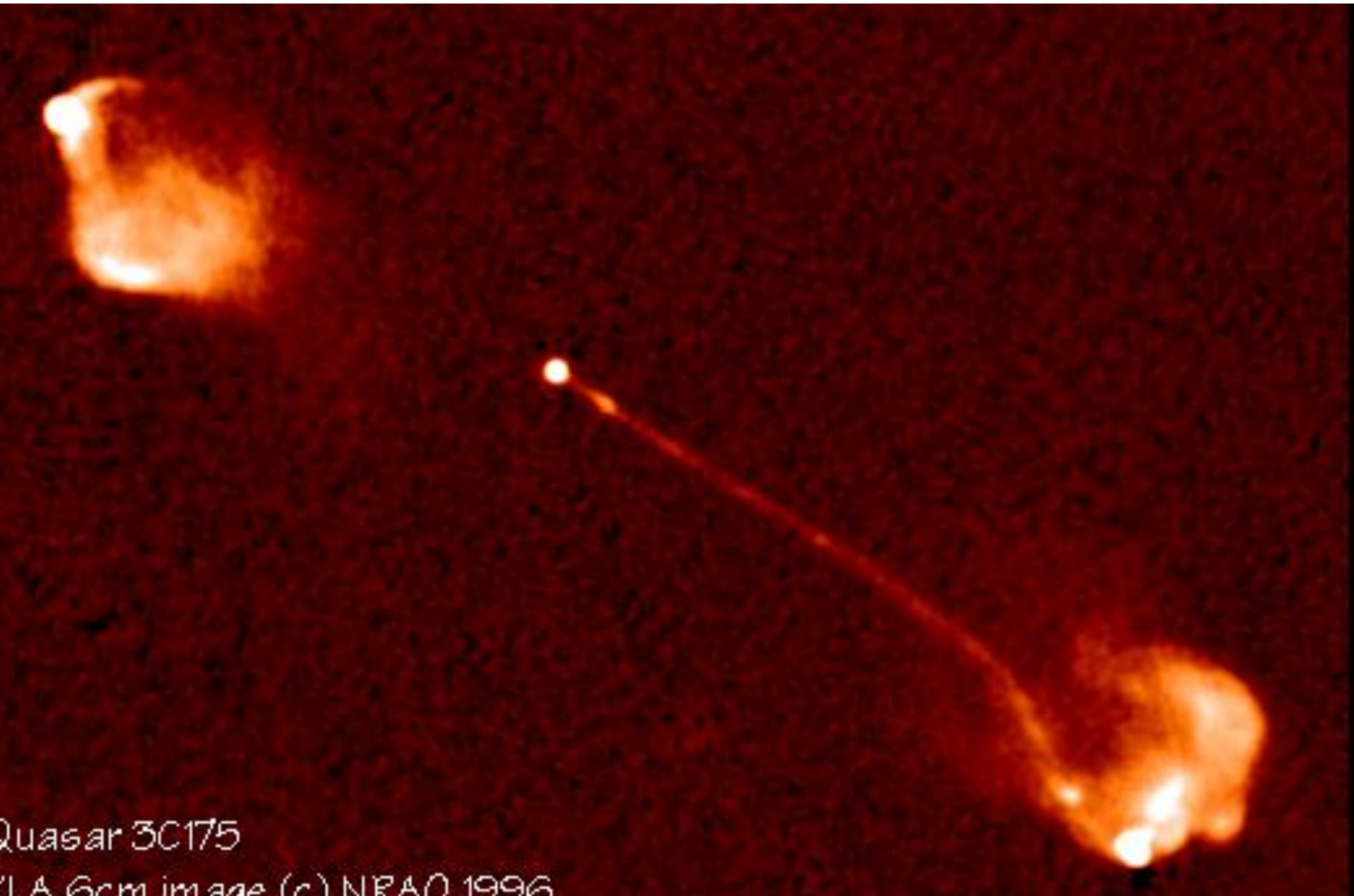


Rádío jatos
(modelo)





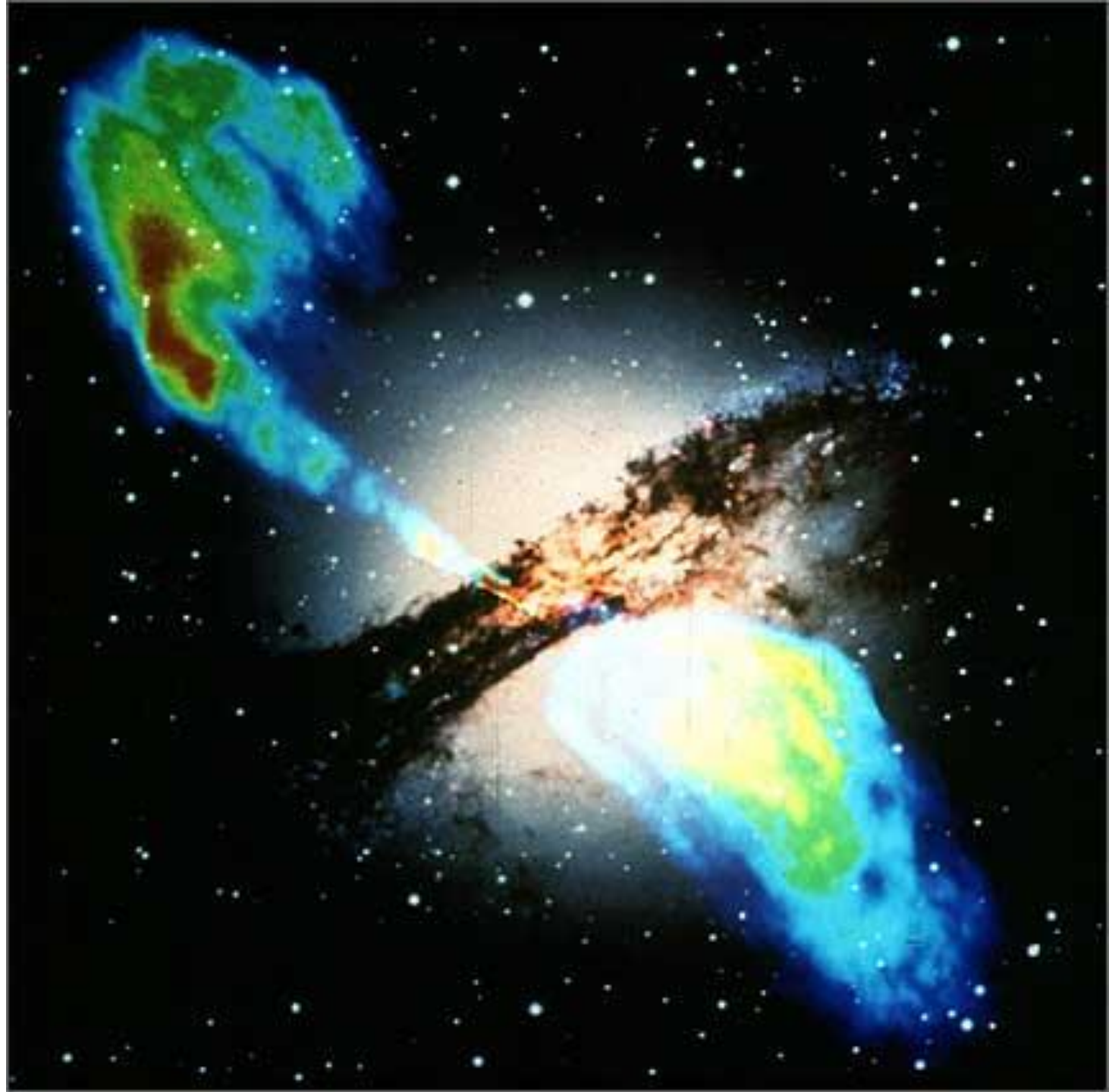
Quasar: rádio emissão



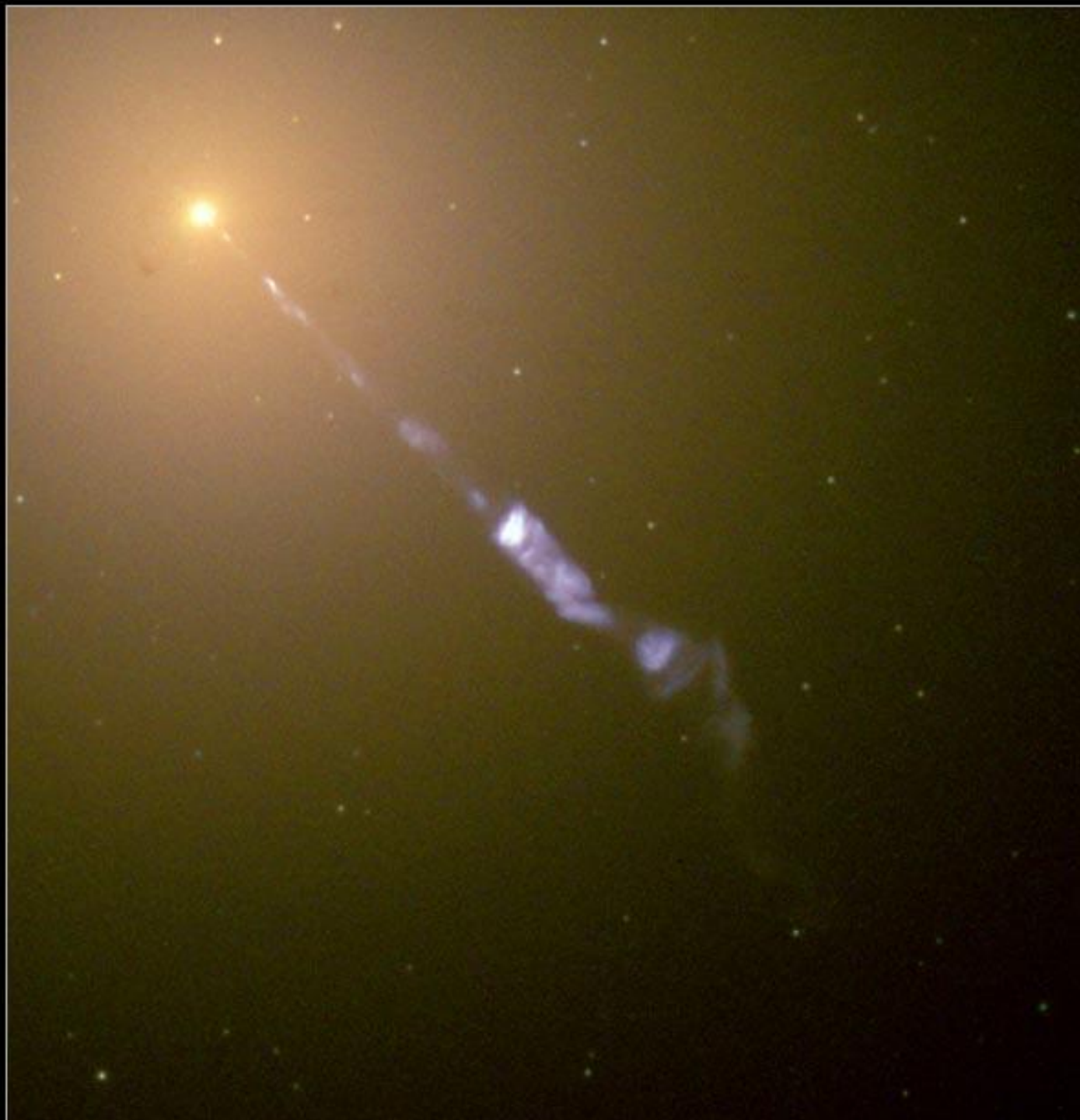
Quasar 3C175

VLBA 6cm image (c) NRAO 1996

Centaurus A



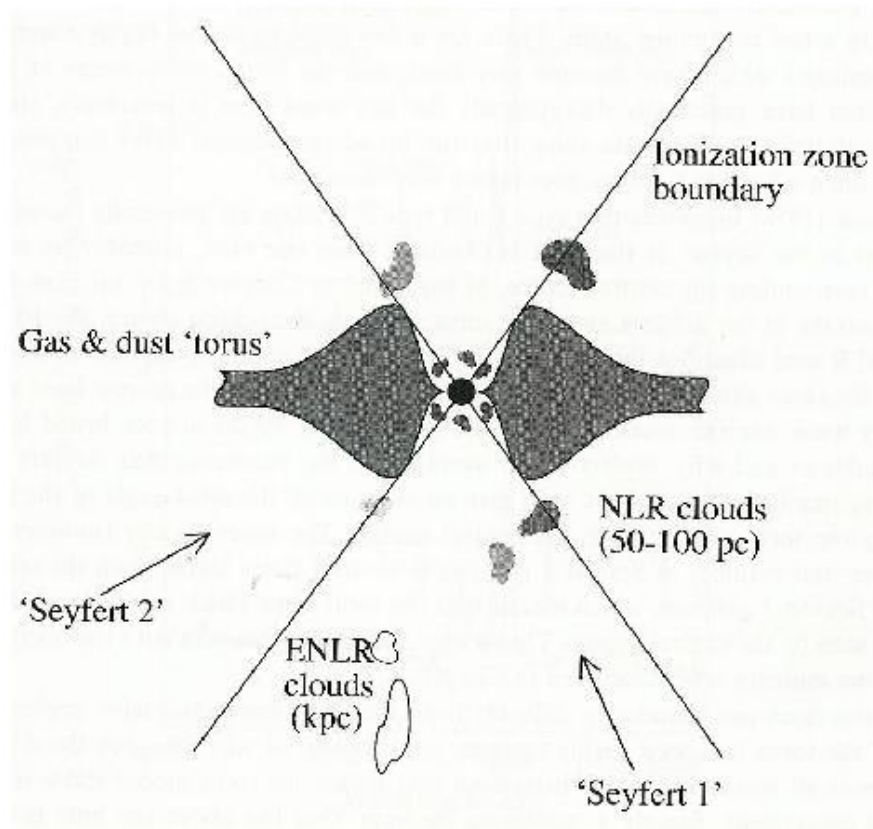
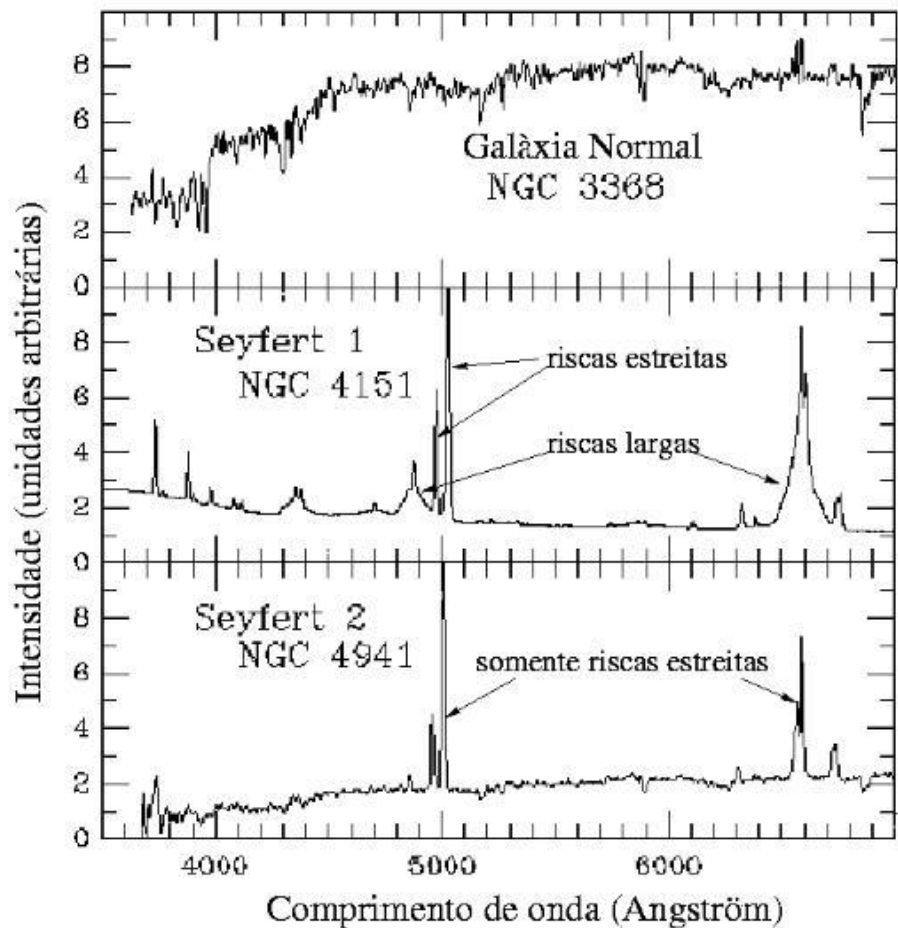
M 87



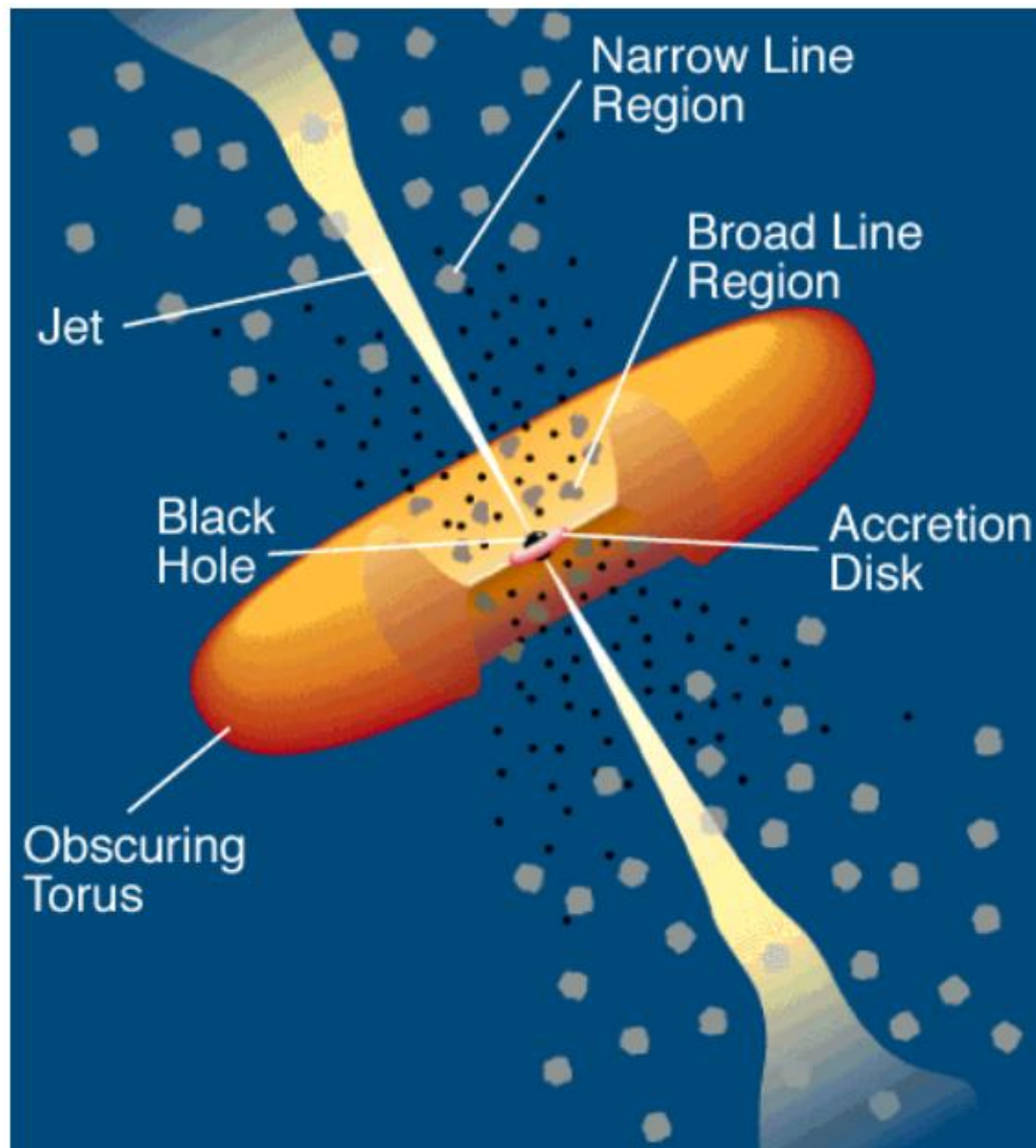




Seyfert 1 e Seyfert 2: o modelo unificado

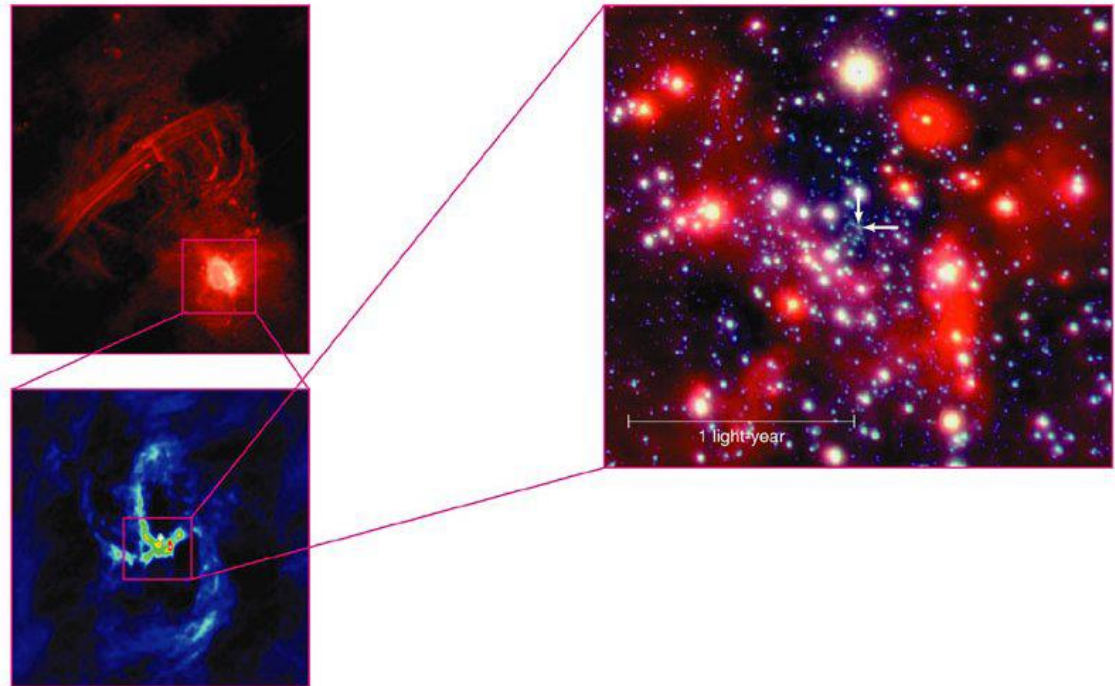


O modelo unificado

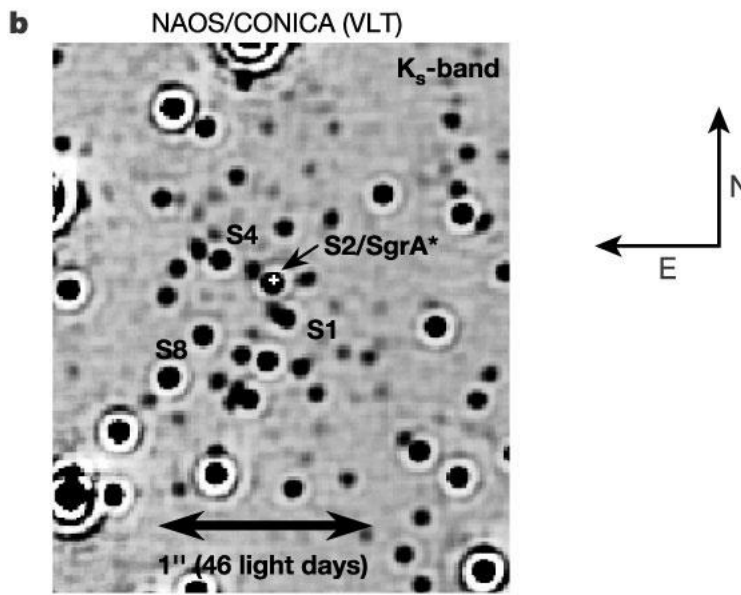
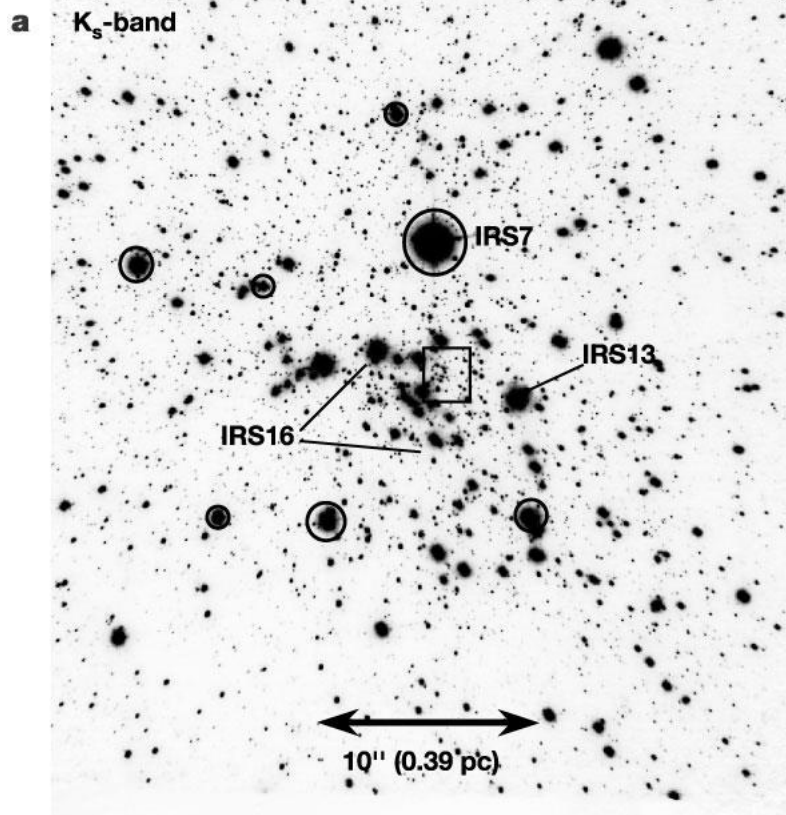


C. M. Urry and P. Padovani

Mini-esprial e Sgr A*



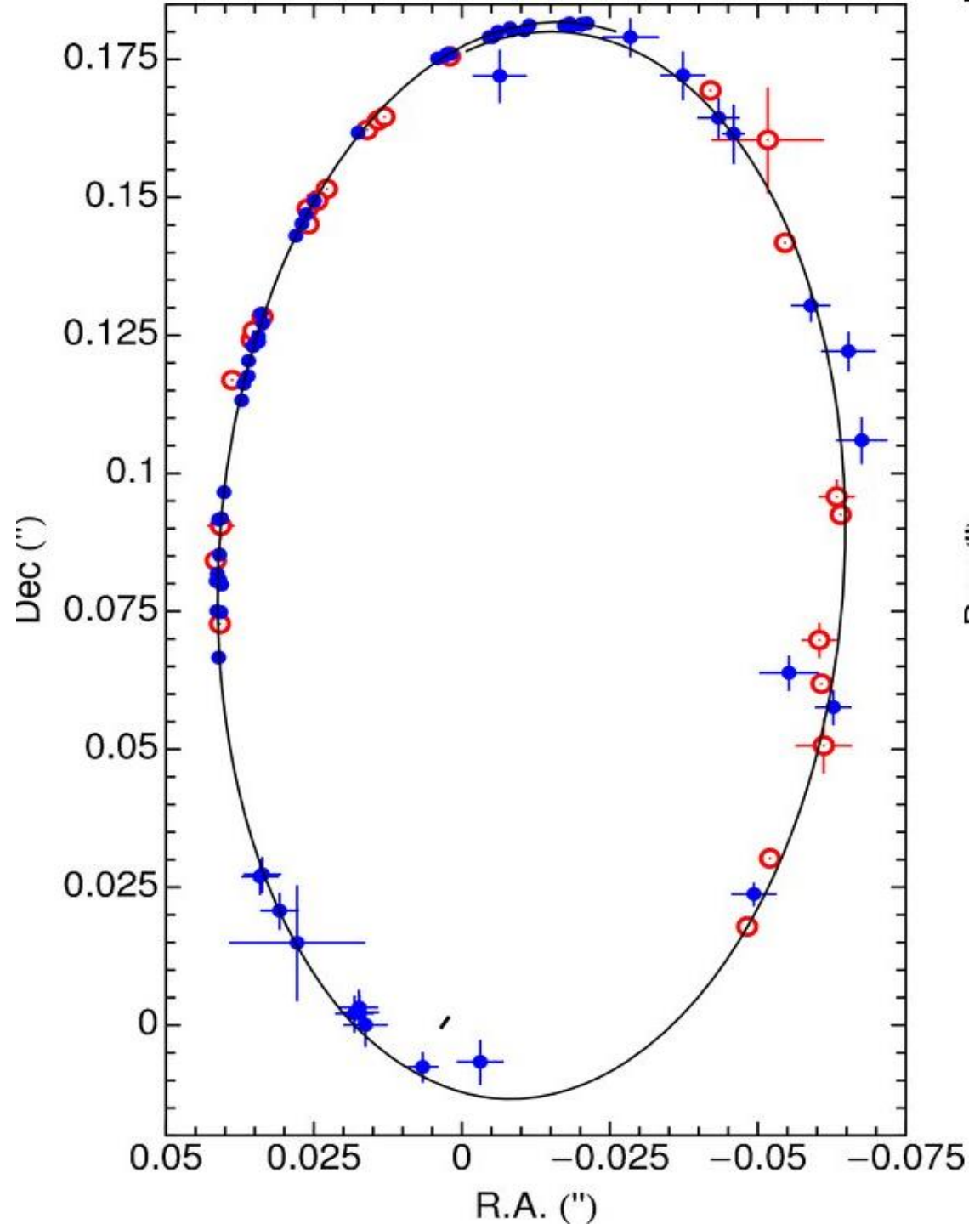
Sag A*

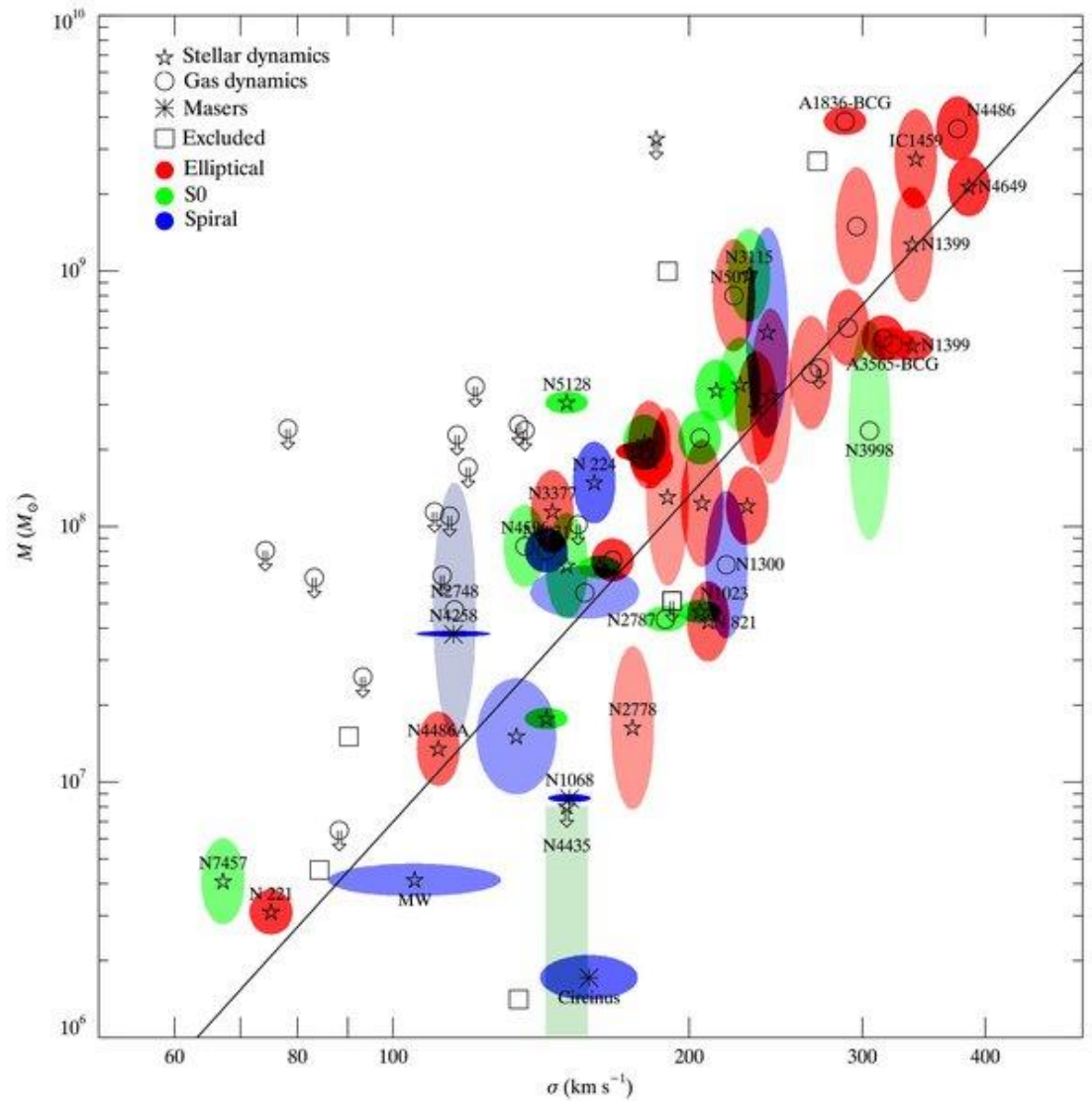


Gillessen et al 2009
ApJ 707, L114

Blue = VLT
Red = Keck

$M = 4.30 \pm 0.30$ Million M_{sun}
 $R_o = 8.28 \pm 0.29$ Kpc





M82: o super-vento

