



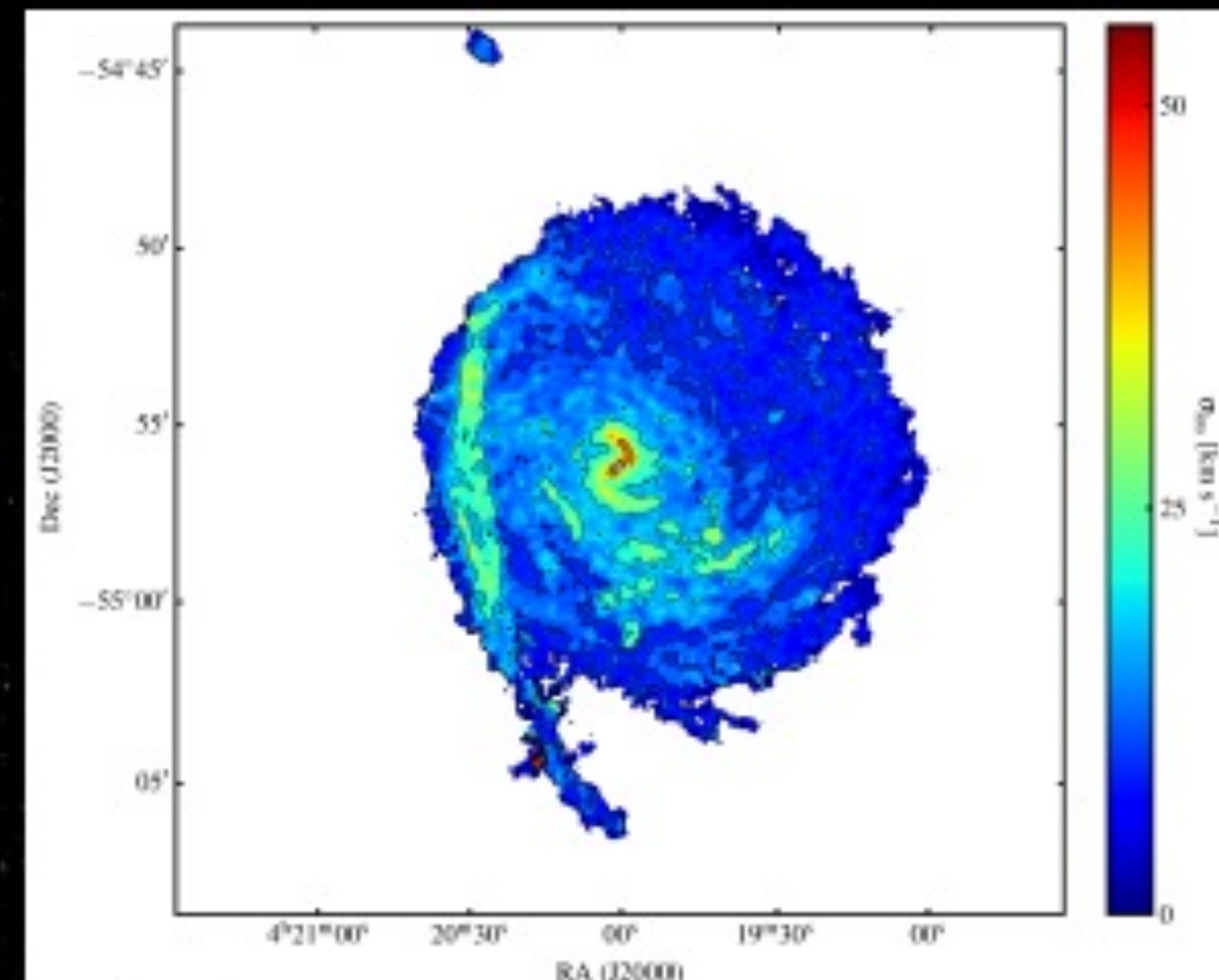
**NGC 1566** is a massive spiral galaxy in the backbone of the Dorado Group ( $D_L=18$  Mpc)  
 For the first time MeerKAT reveals

- a past massive interaction with NGC1581 shaped the lopsided spiral disk
- on-going tidal interactions with smaller satellites are shaping the spiral arms

**MeerKAT** 55 hours L-band: **deepest** neutral atomic hydrogen **HI** observation of a massive ( $M_{HI} = 1.2 \times 10^{10} M_{\odot}$ ) grand design spiral star forming galaxy, **NGC 1566**

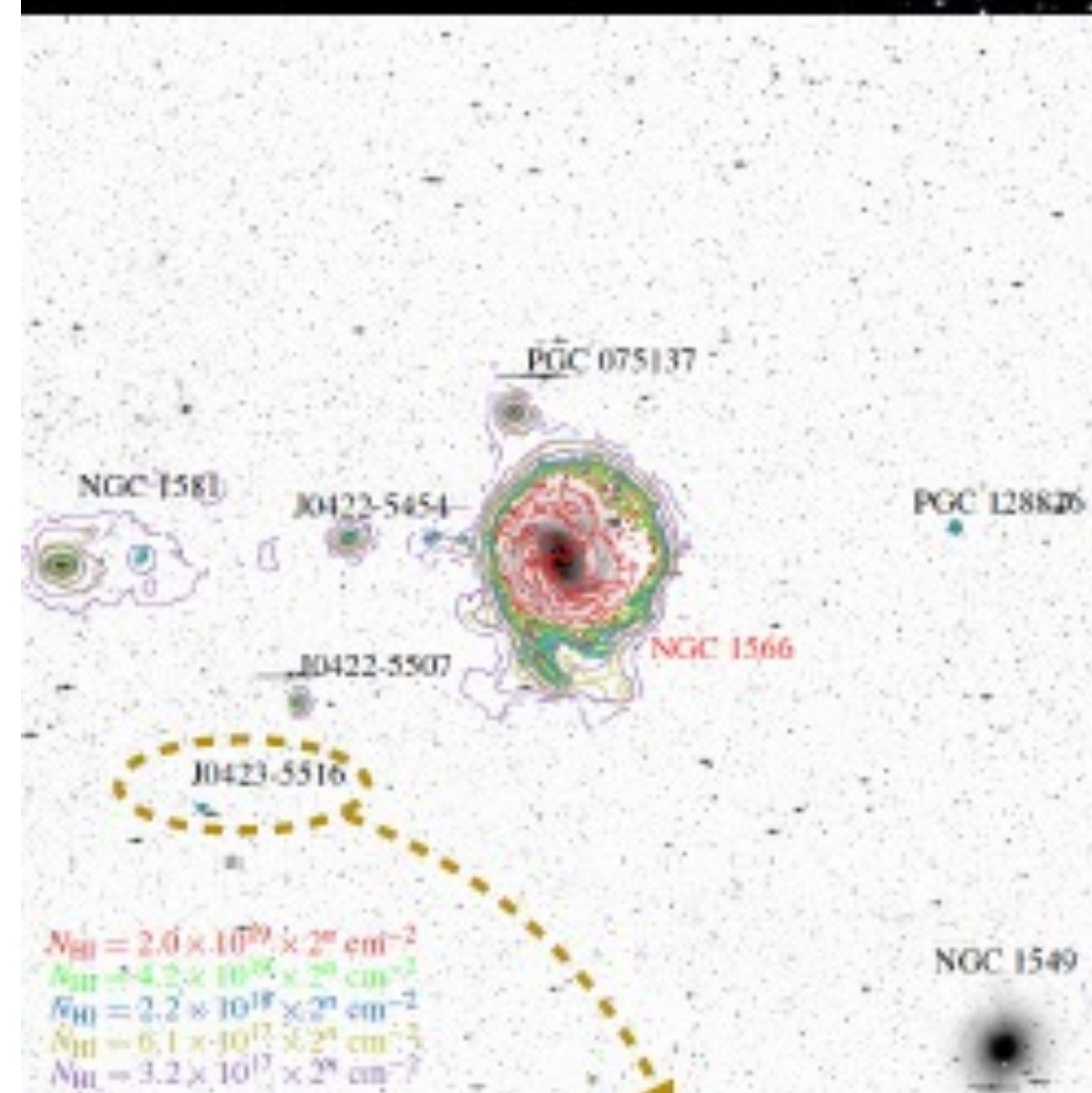
Mass limit at 20'':  $M_{HI} = 4 \times 10^5 M_{\odot}$  (S/N=3, 16 km s<sup>-1</sup>)

Column density limit at 20'':  $N_{HI} = 4.1 \times 10^{18} \text{ cm}^{-2}$  (S/N=3)



**Moment 2:** the disk is kinematically lopsided

- **South:** intertwining spiral arms with broad line-widths and enhanced star formation
- **West:** relaxed and regularly rotating
- **East:** diffuse lagging HI stream leads to high linewidths ( $> 25$  km/s)
  - remnant of a recent tidal interaction with PGC075137 in the North
  - the lost gas is swept up along the spiral arms



**Smallest HI rich dwarf beyond the Local group**

$M_{HI} = 1.67 \times 10^6 M_{\odot}$ ;  $M_{\star} = 2.3 \times 10^6 M_{\odot}$

