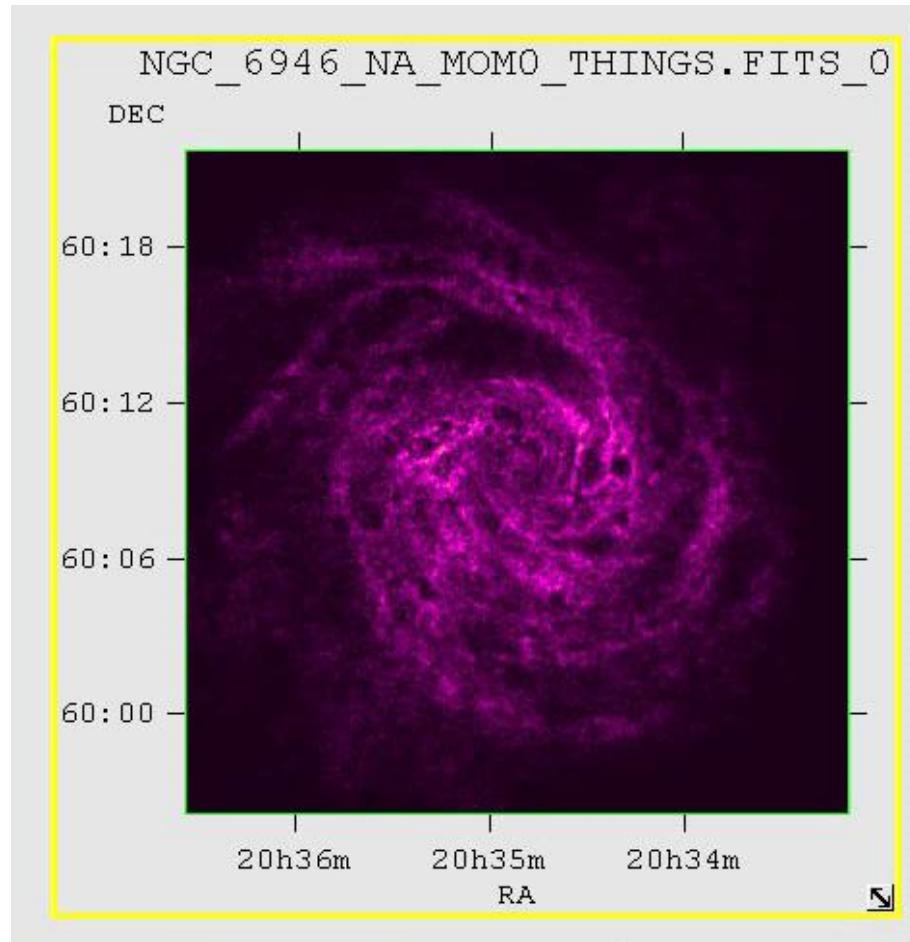
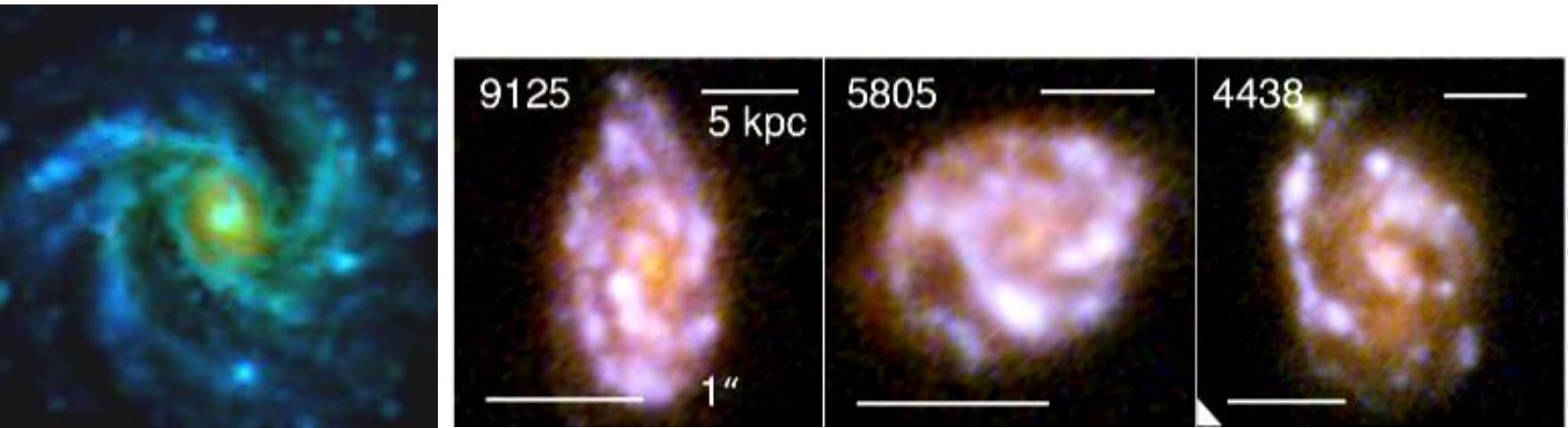


<http://www.naoj.org/Pressrelease/2009/09/08/fig1.jpg>

Необычные объекты в спиральной галактике NGC 6946

Ю.Н. Ефремов
ГАИШ МГУ

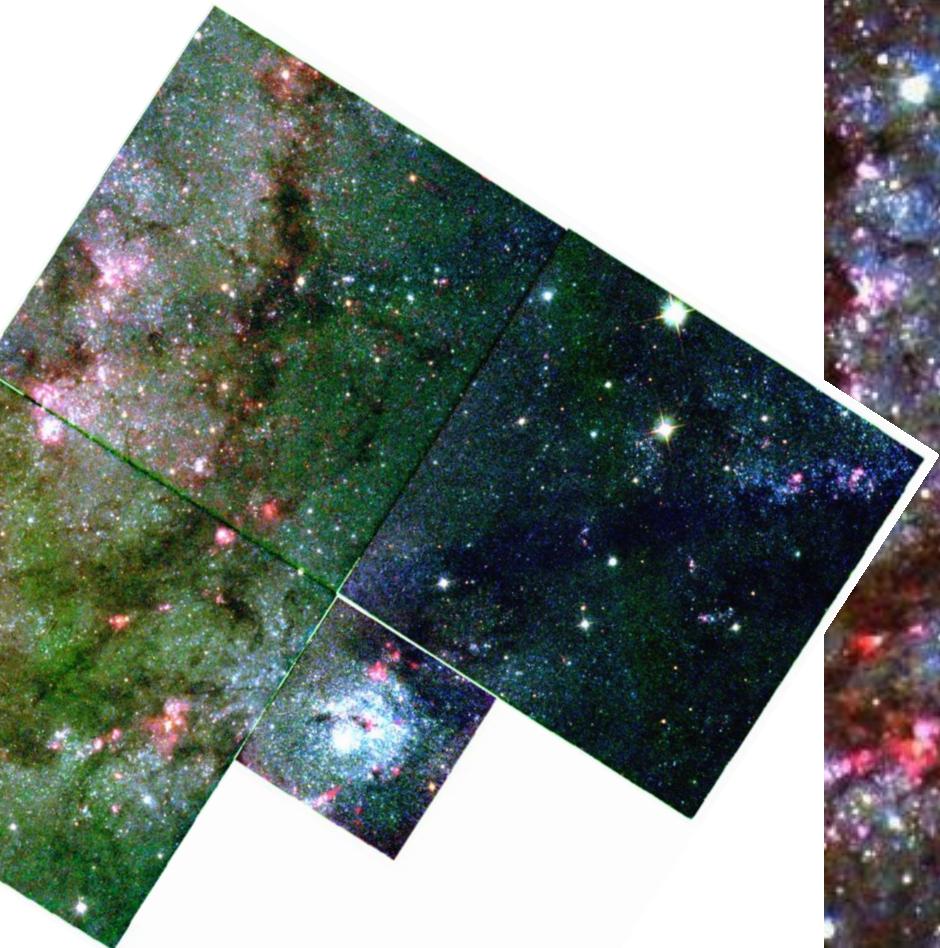




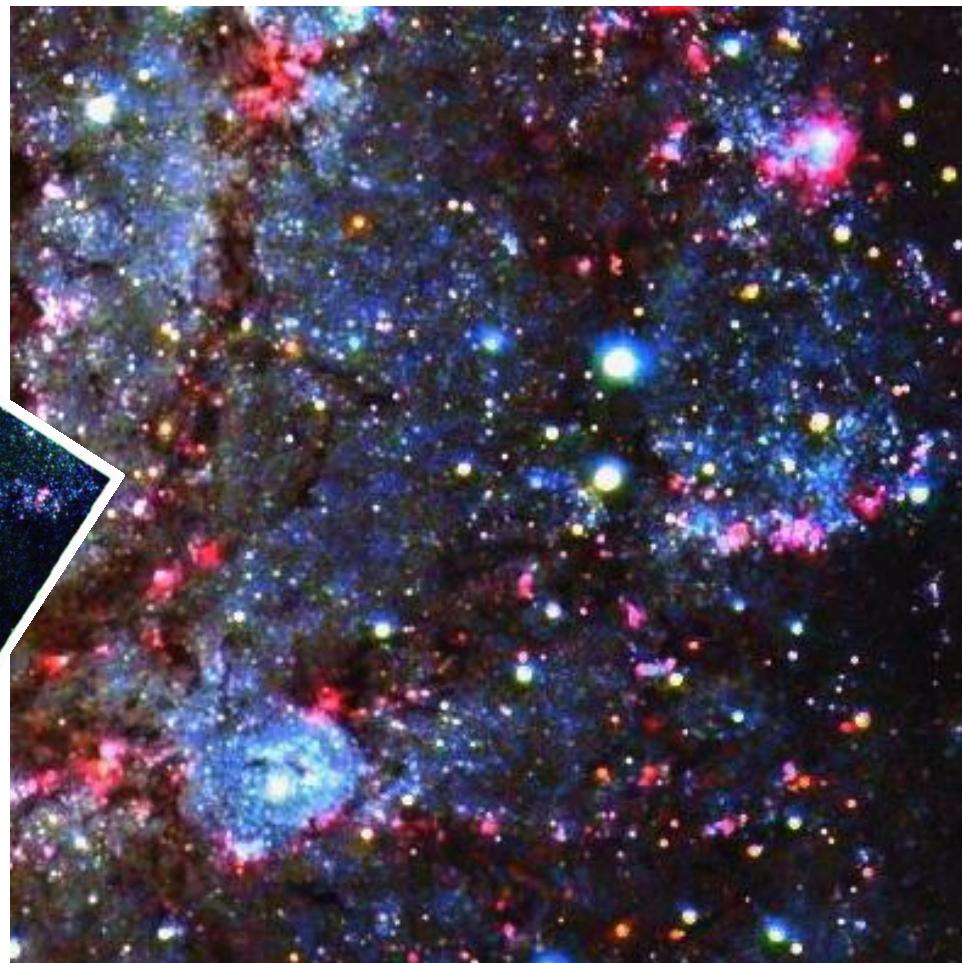
NGC 6946 is inside the Peeble's Local Void, and at low resolution looks like the Elmegreen's (ApJ 781, 11, 2014) "woolly" galaxies, which are observed usually at redshifts $\sim 1.4 - 1.8$ and mostly demonstrate transition from clumpy to spiral galaxies.

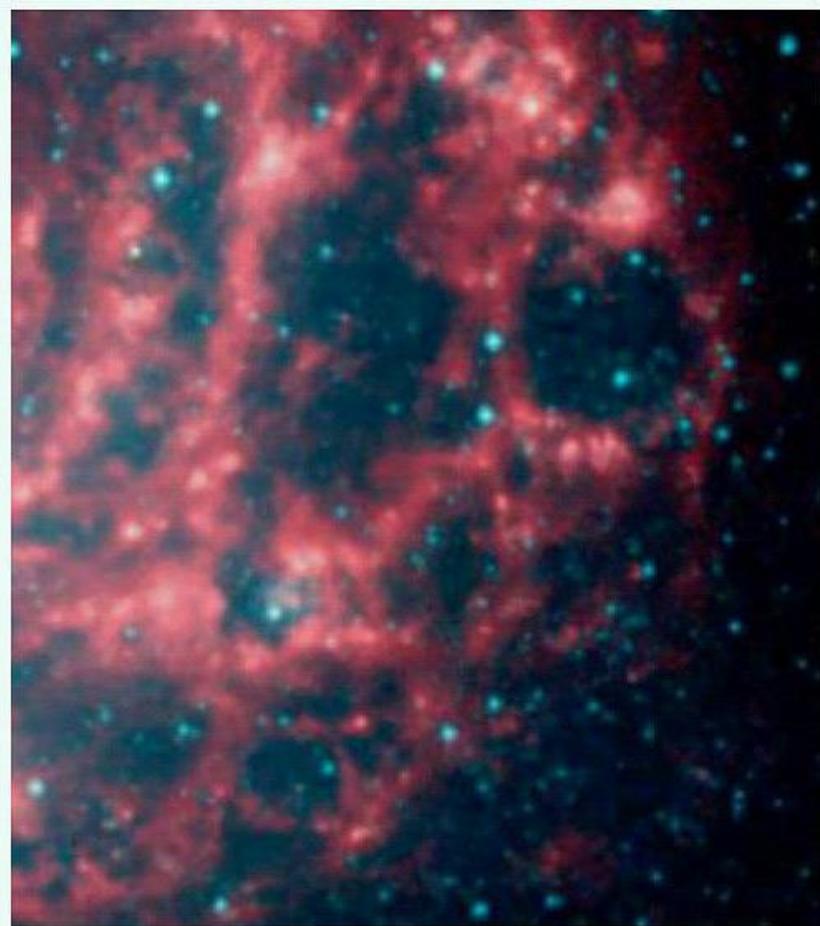


HST



Subaru





NGC_6946_NA_MOMO_THINGS.FITS_0

DEC

60:10:30

60:10:00

60:09:30

60:09:00

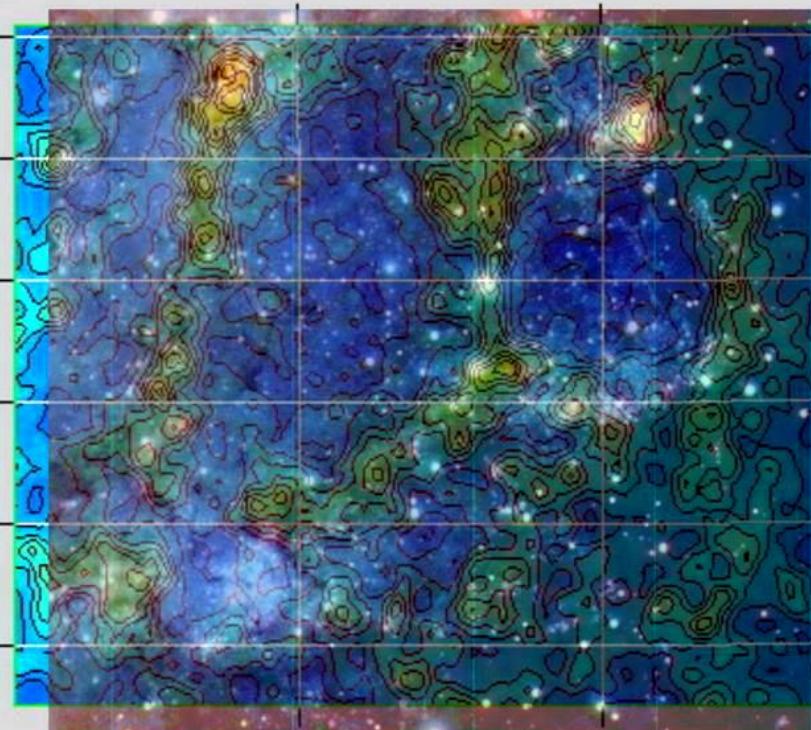
60:08:30

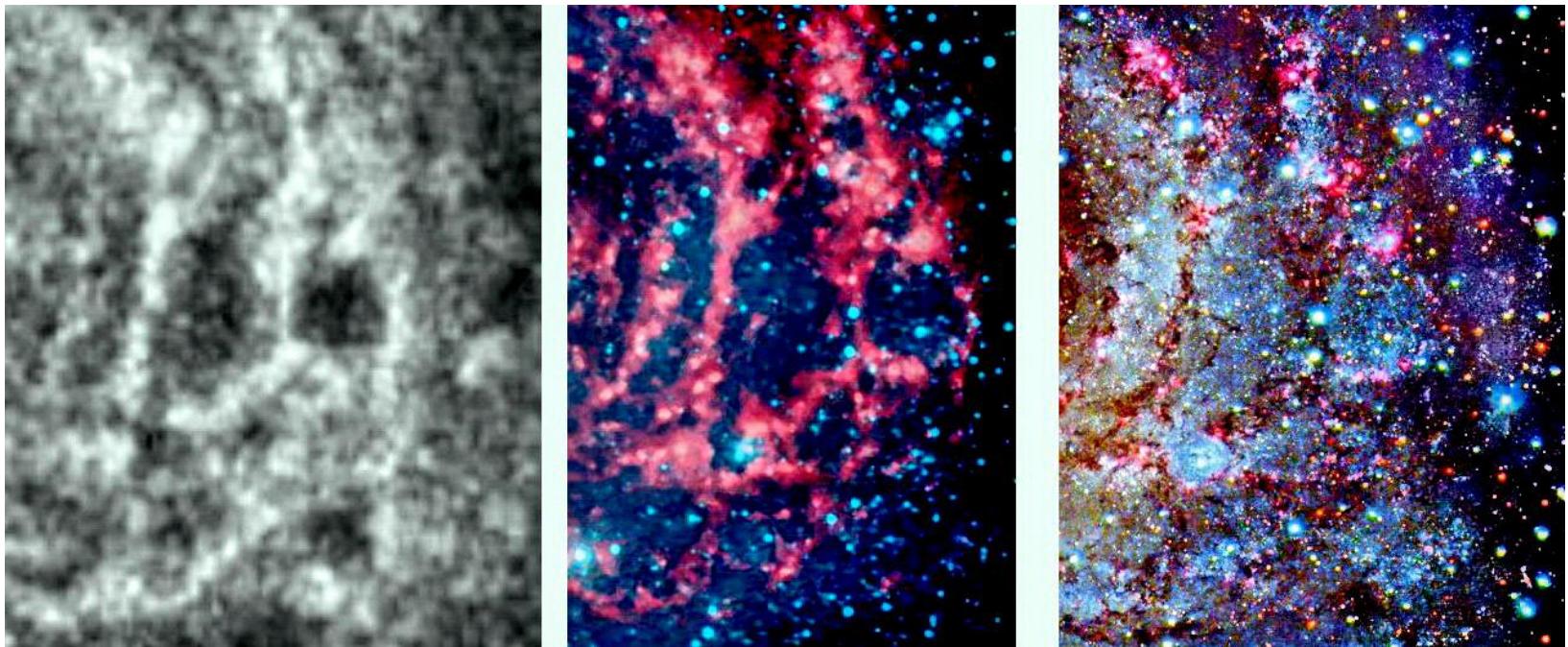
60:08:00

20h34m30s

20h34m20s

RA



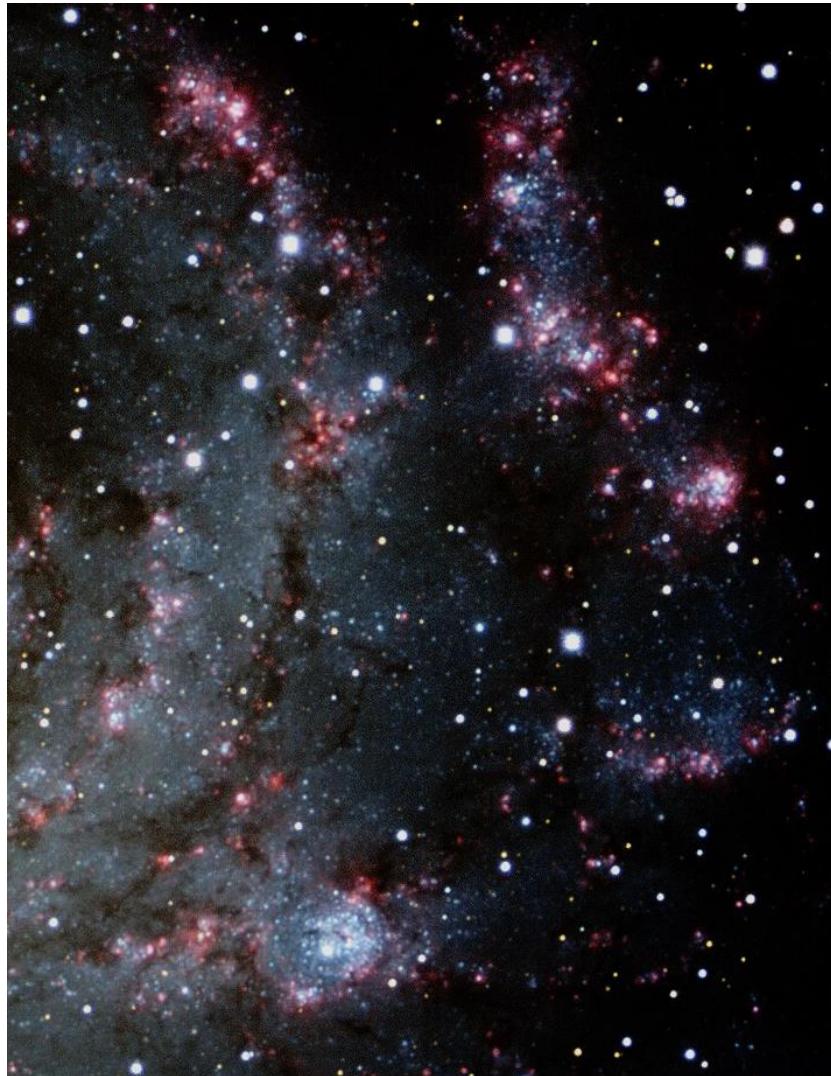


Происхождение полостей в HI диске NGC 6946:

- 1) взрывы сверхновых звезд и звездный ветер от горячих звезд (Heiles, 1972)
- 2) падение газовых облаков на диск галактики (Tenorio-Tagle & Bodenheimer (1988)).
- 3) *no need in a special cause - pervasive* (повсеместная, всюду проникающая) *turbulence and fractal structure in the interstellar gas imply the existence of large holes and gaps* (Elmegreen, 1997).
- 4) гравитационное воздействие на газ диска пролетающими сквозь него мини-гало темной материи (Bekki & Chiba, 2005).
- 5) Выдувание высокознергичным джетом ??



Subaru 8m



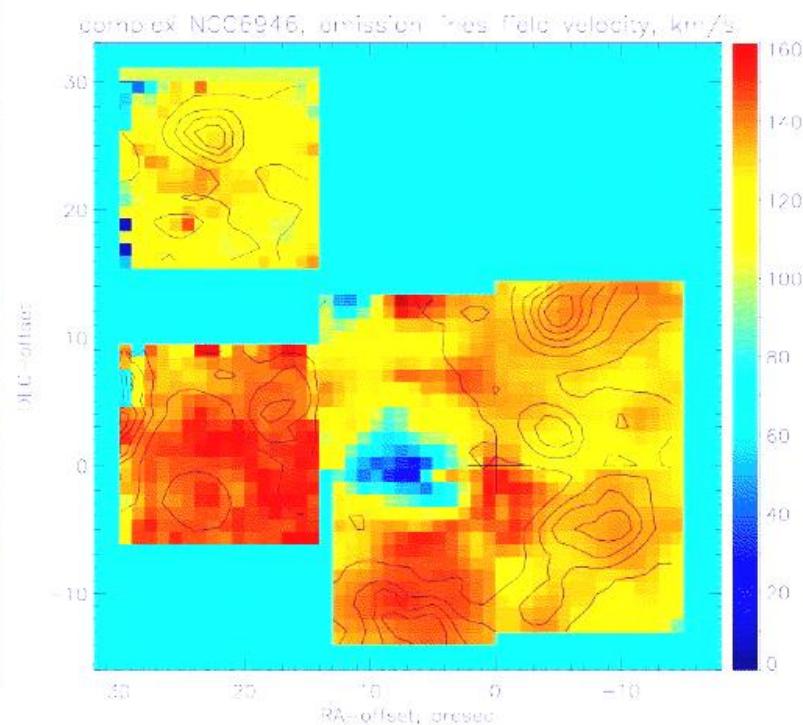
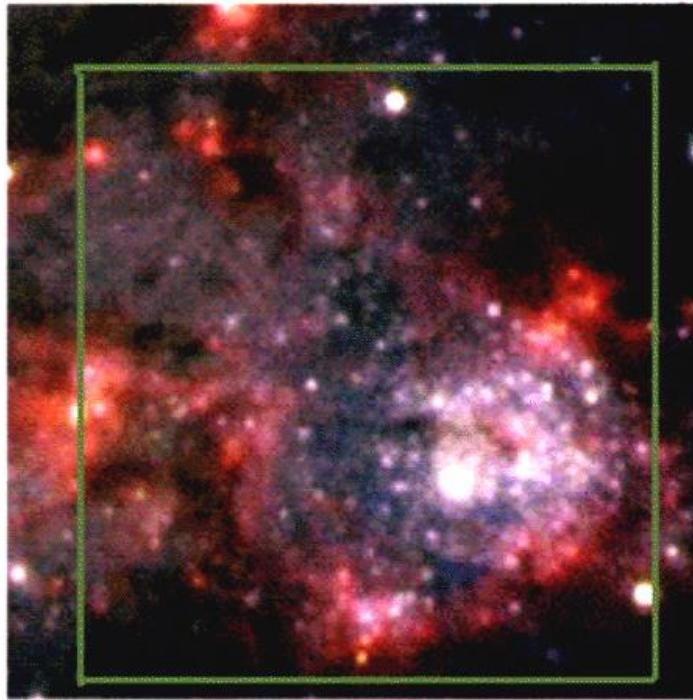
KPNO 4m



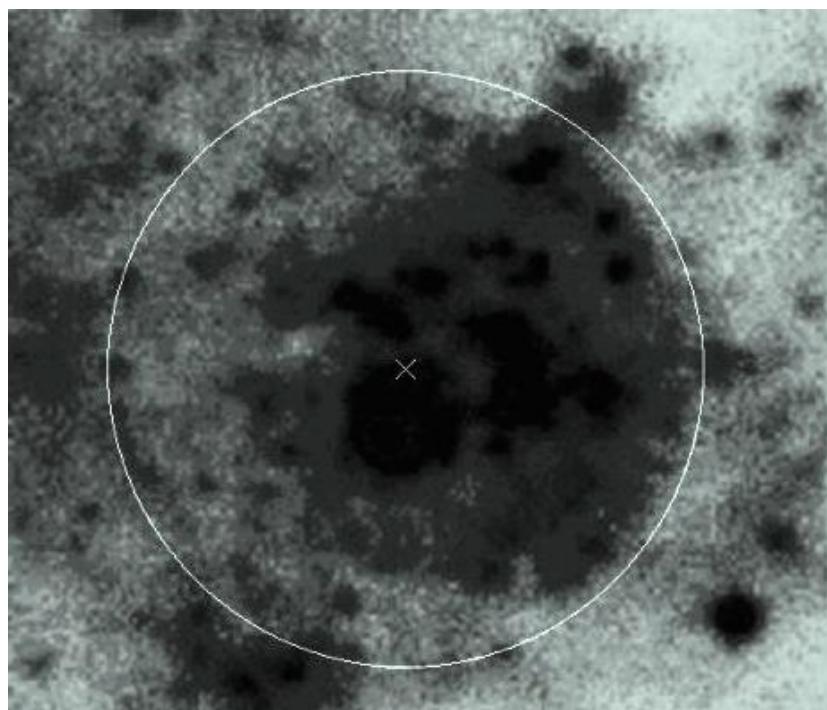
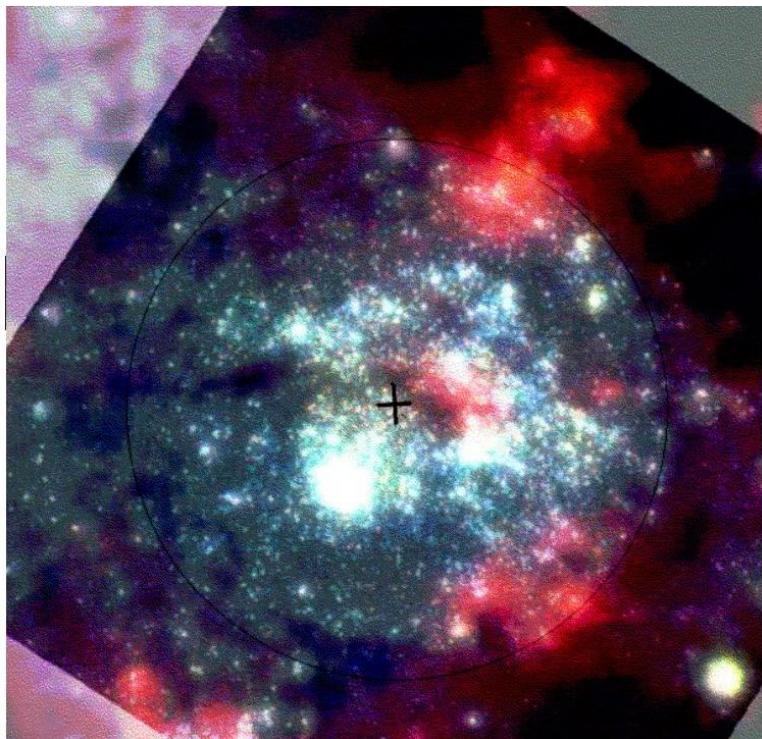
Subaru, 8m

«Черные дыры»
и регулярные
полоски рядом

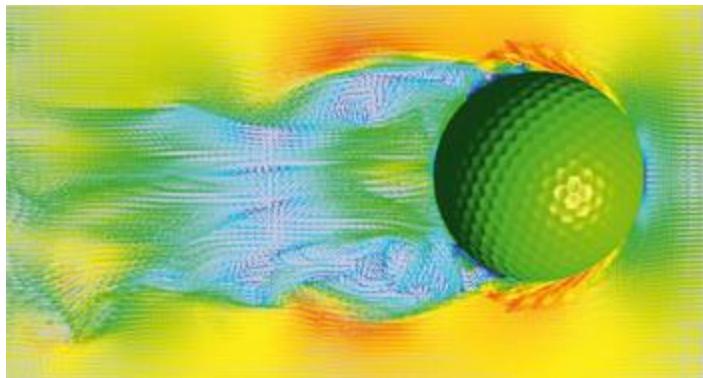
Что это?



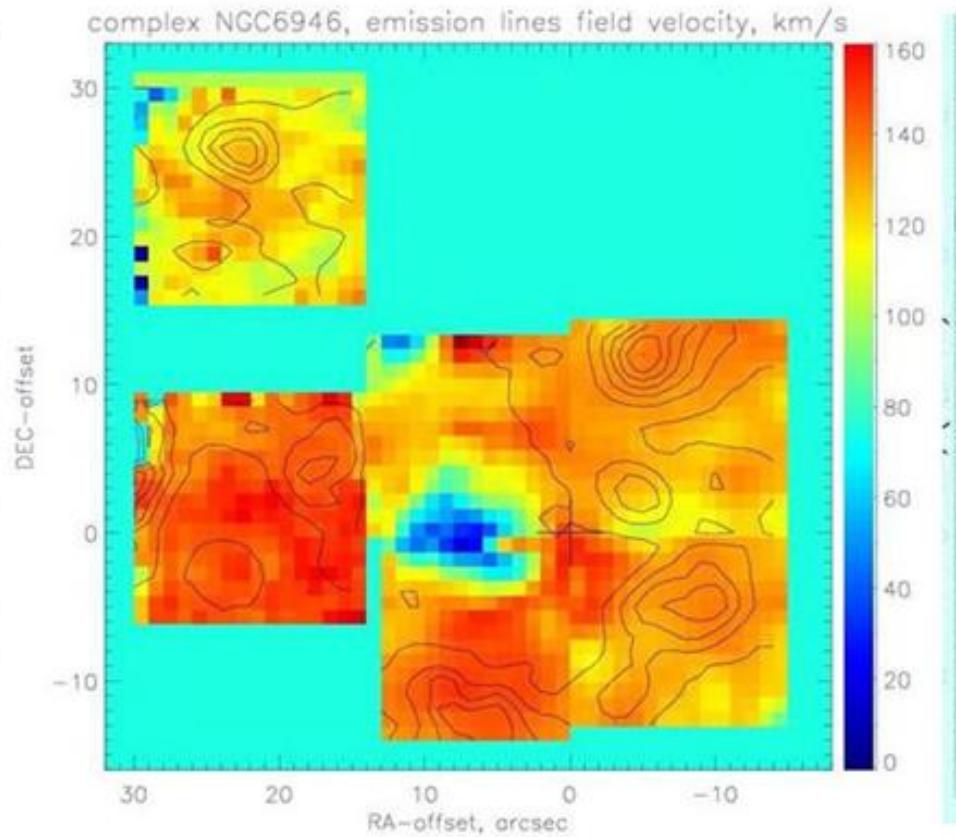
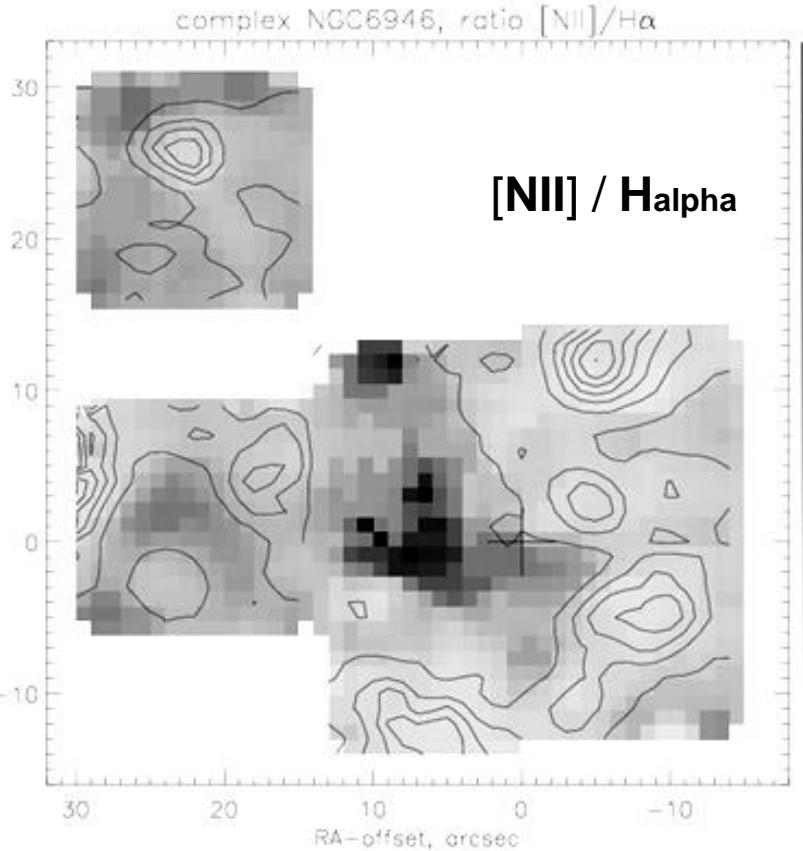
Комплекс Ходжа имеет резкую западную границу и размытую восточную. Возможно, что это карликовая галактика, летящая низко над плоскостью NGC 6946 и испытывающая *ram pressure*, из-за чего у комплекса и возникает резко очерченная дуга западной границы.



$D = \sim 700$ pc



The region of shock ionization is also the region of v_r deviations from the local galactic v_r

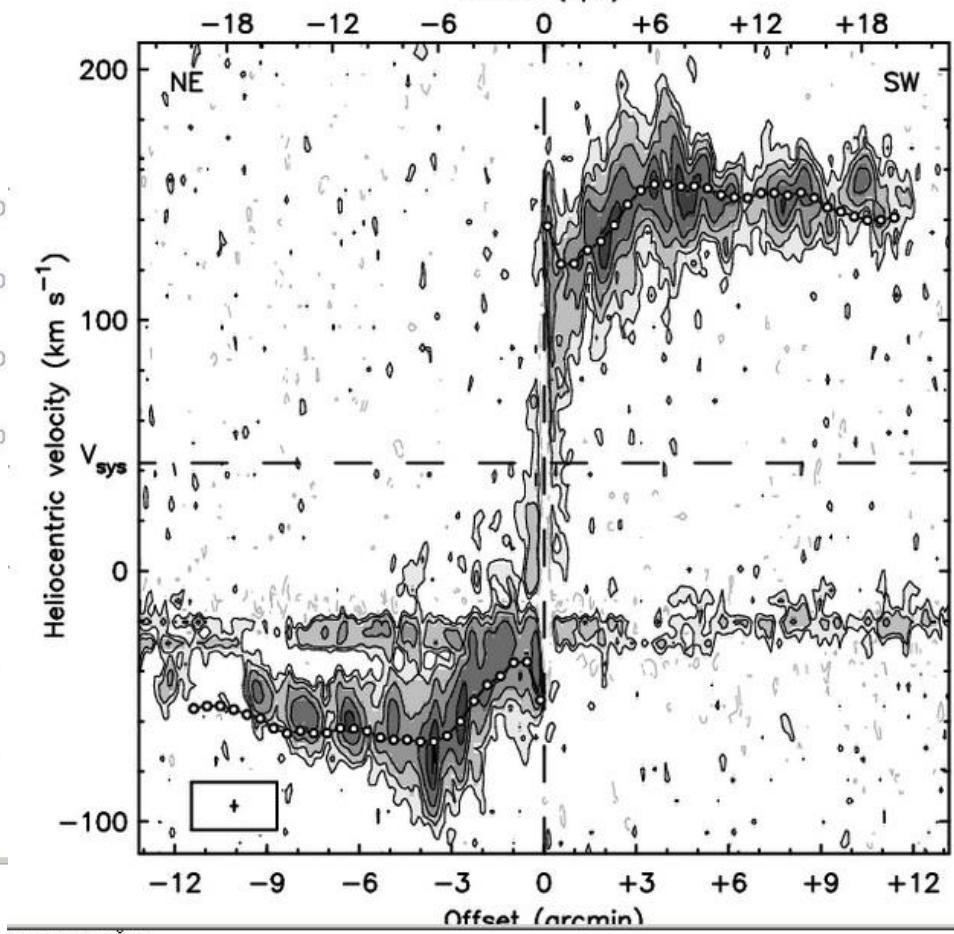
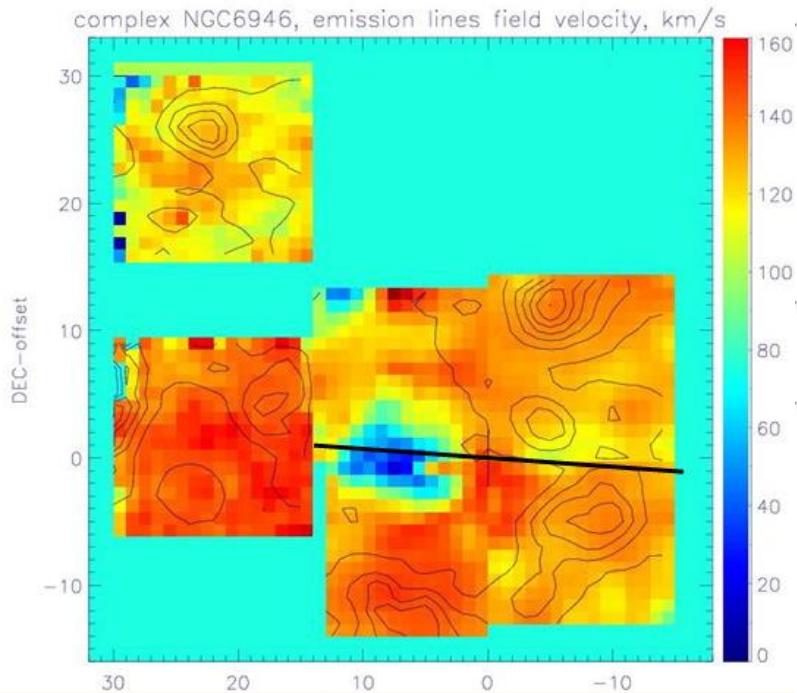


Through this mini-hole in NGC 6946 gas we see the ionized gas of our Milky Way!
- because the latitude of N 6946 is only ~ 12 degree

HI holes and high-velocity clouds in the spiral galaxy NGC 6946

*R. Boomsma- T. A. Oosterloo, F. Fraternali
et al. (2008)*

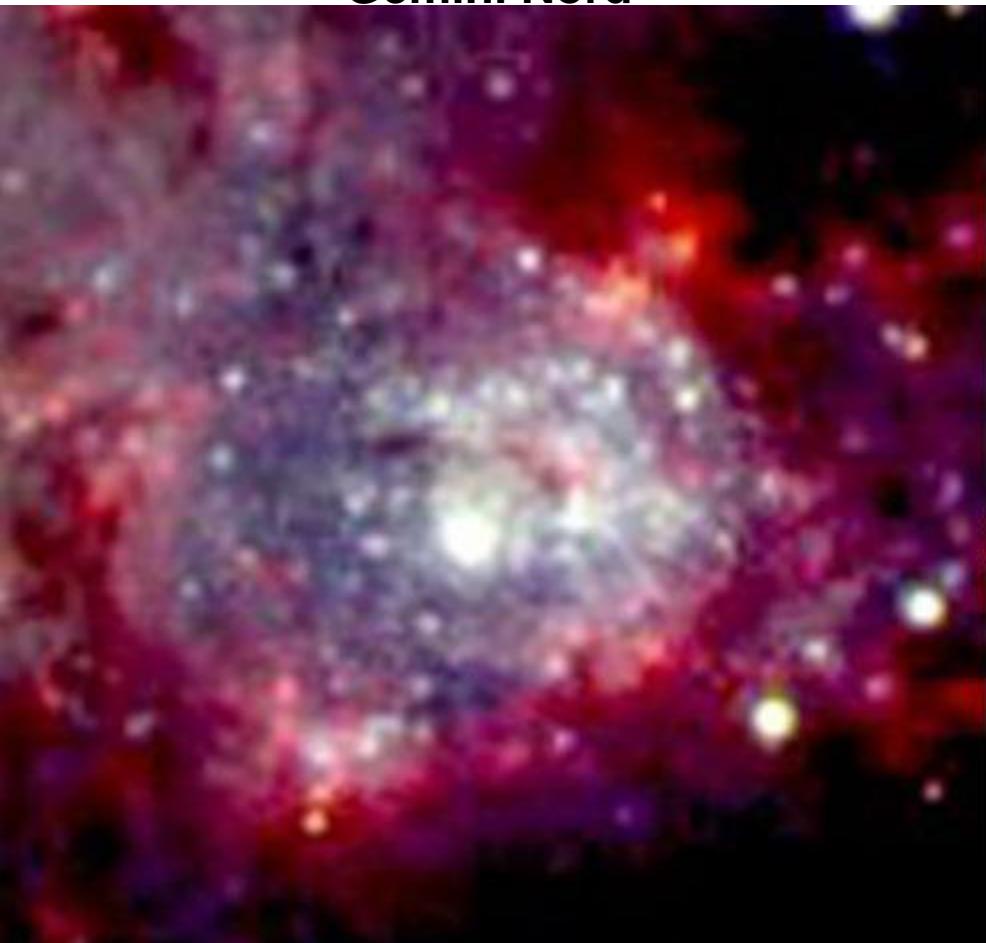
V_r field from H_a Multi Pupil Fiber Spectrograph



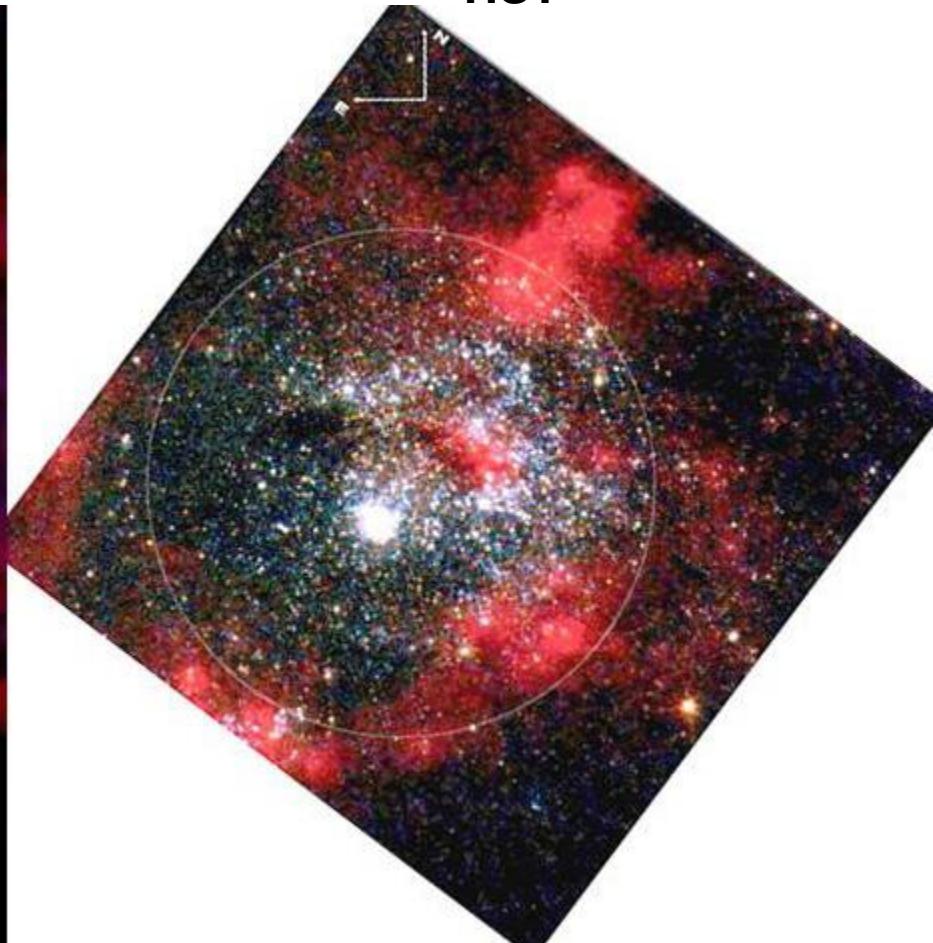
ЗАМЕТКИ К ГЛАВЛЕНИЮ

Hodge complex

Gemini Nord



HST



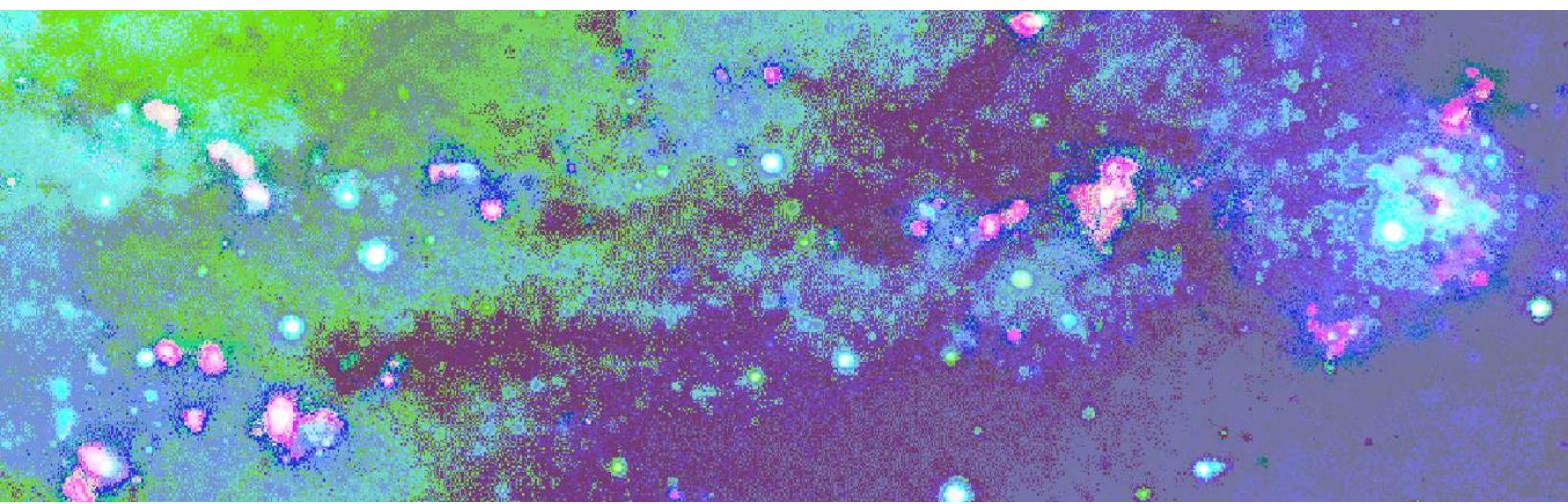
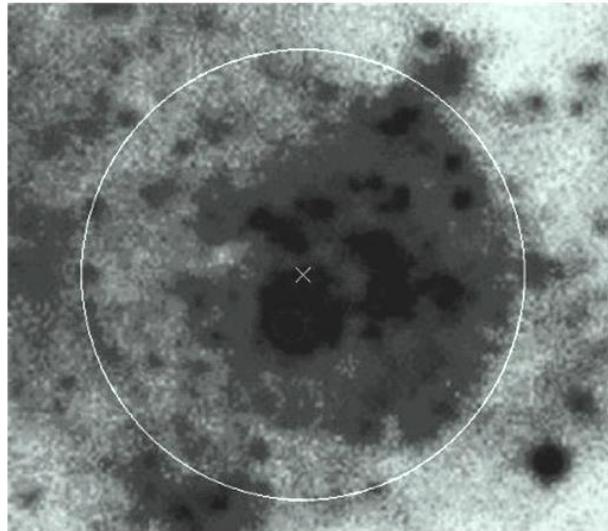
M51

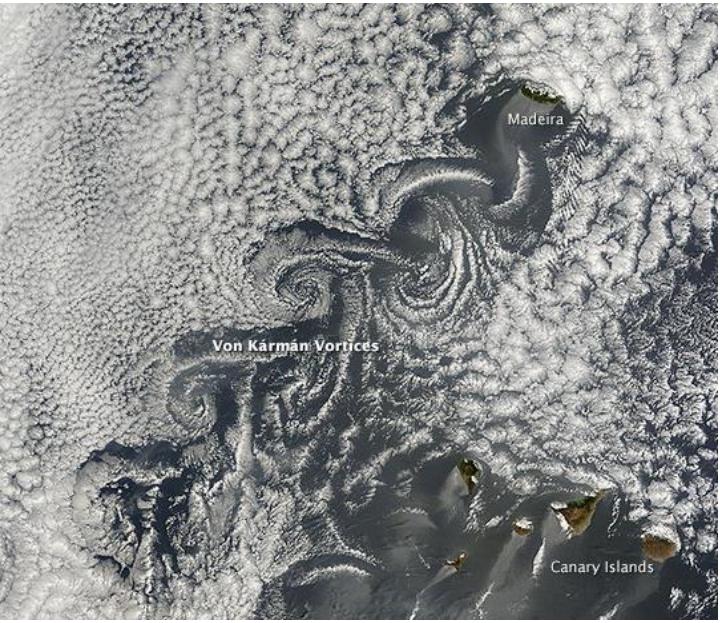


NGC 6946







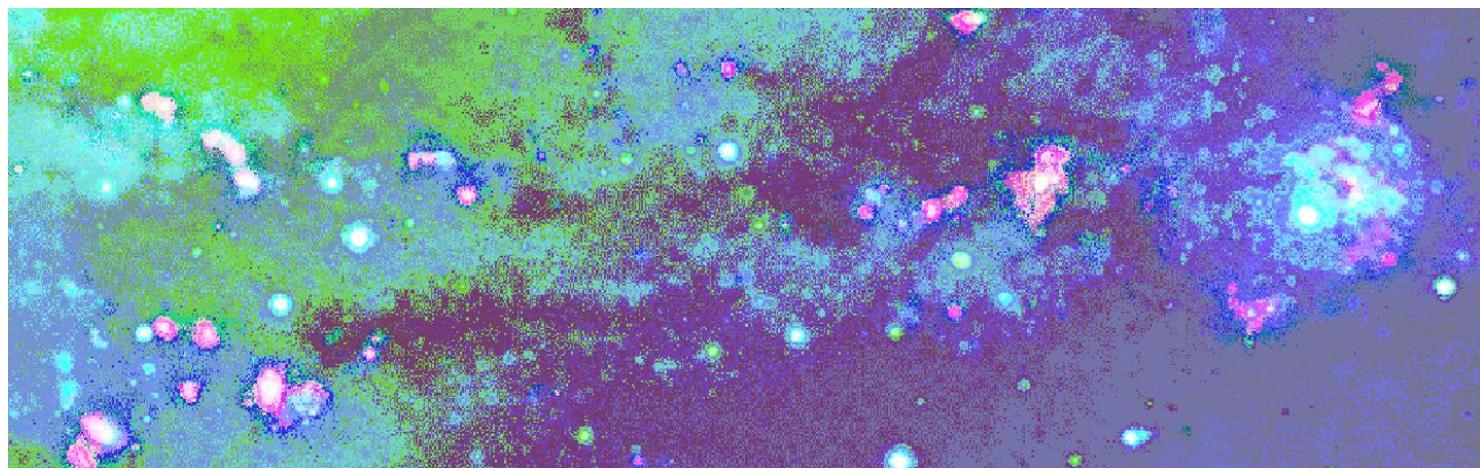
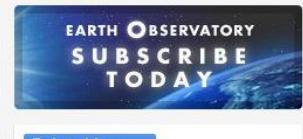


Von Kármán Vortices
in the Greenland Sea

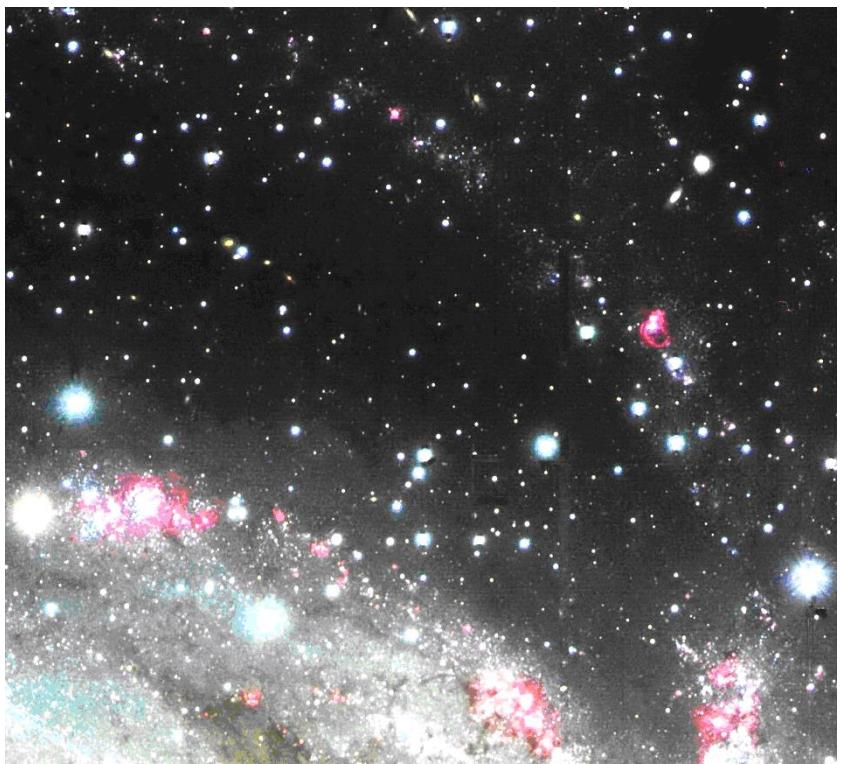
[Image Location](#)

No other images in this Event

[Return to Natural Hazards](#)

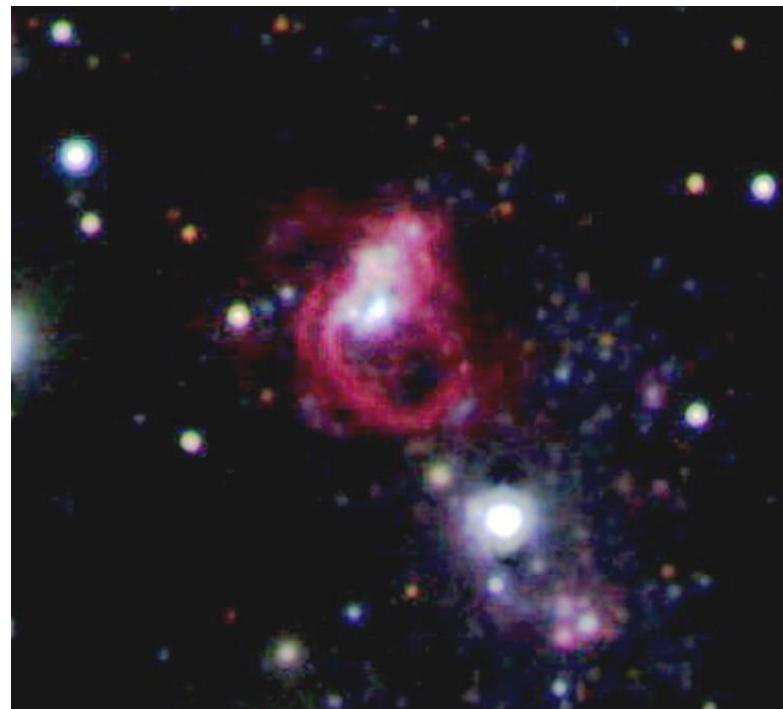


Comet-like tail as result of small angle of the complex motion relative to the galaxy plan - near it - ram pressure?





Jpg



Subaru

tiff



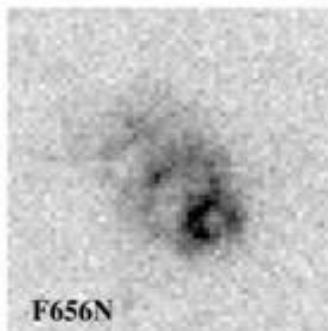
Subaru



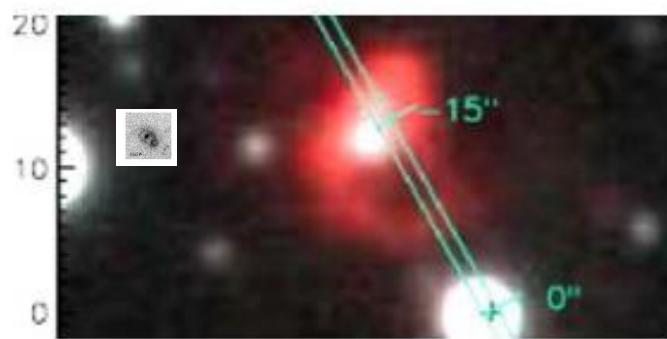
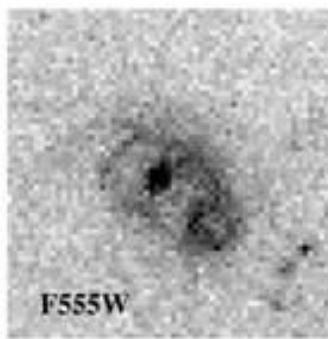
KPNO

The largest
in NGC 6946
SNR: MF16

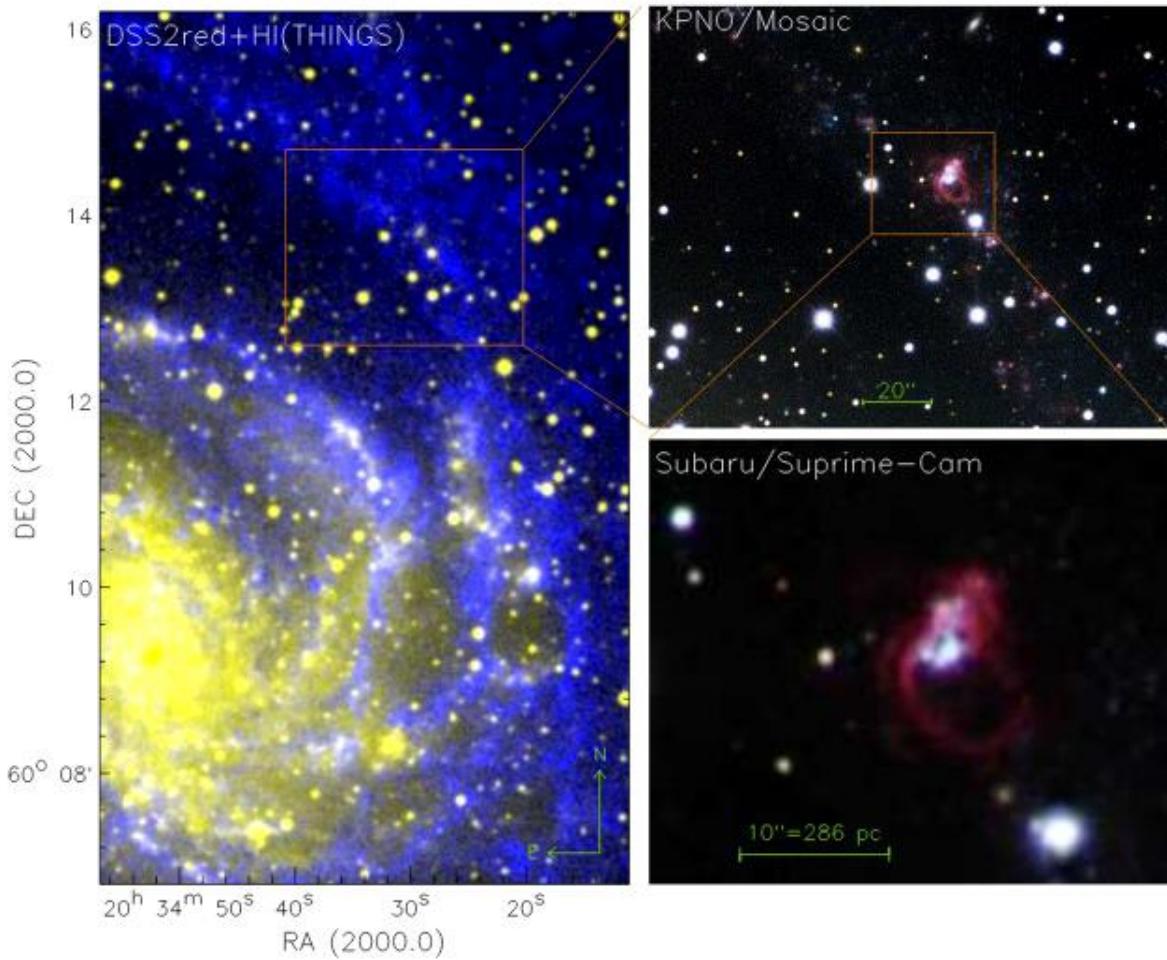
MF16, 3x3"



Red ellipse, scale in arcsec



Красный эллипс намного больше, чем самый большой
SNR in NGC 6946 - MF16



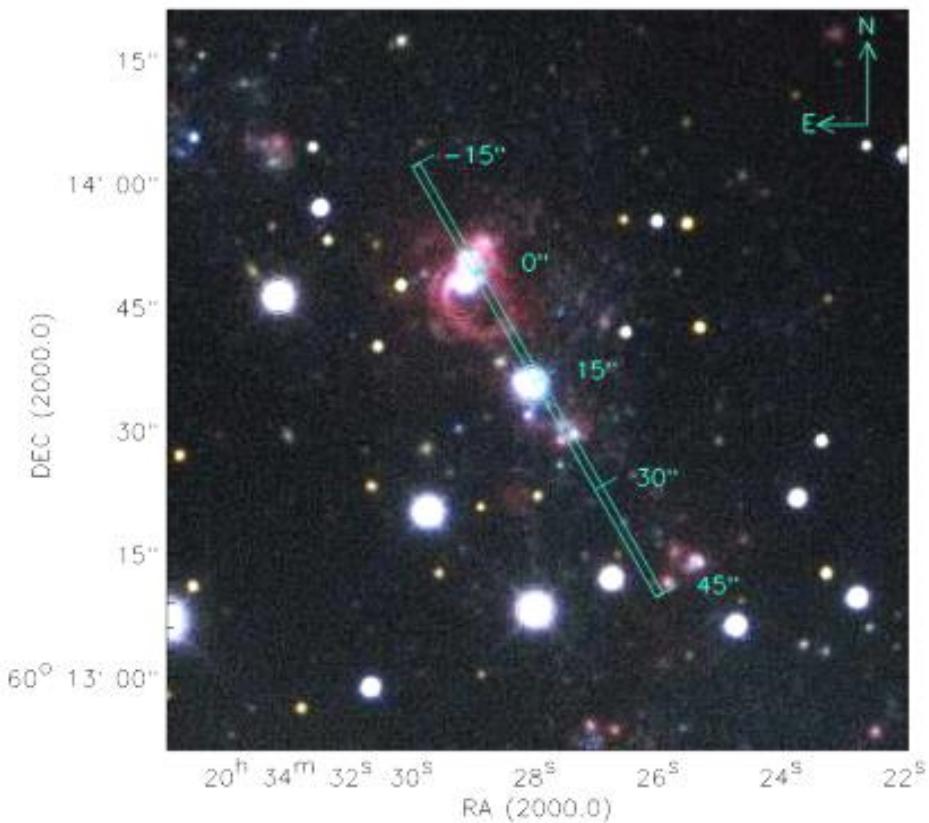


Figure 2. The region of the Northern arm immediately around the Red ellipse (KPNO image). The position of the SCORPIO-2 slit is overlapped together with the radial scale, the value $r = 0''$ was accepted to the continuum brightness peak within the slit, i.e., the bright star cluster centre.

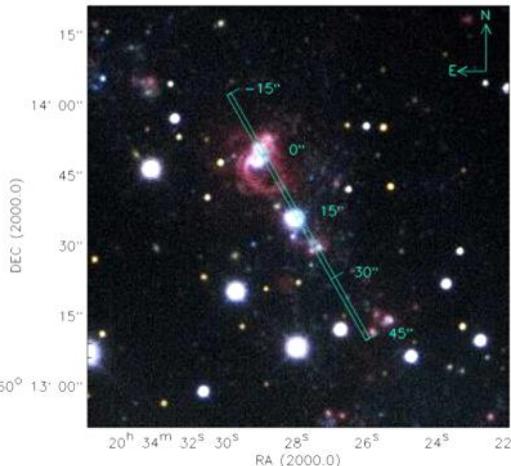
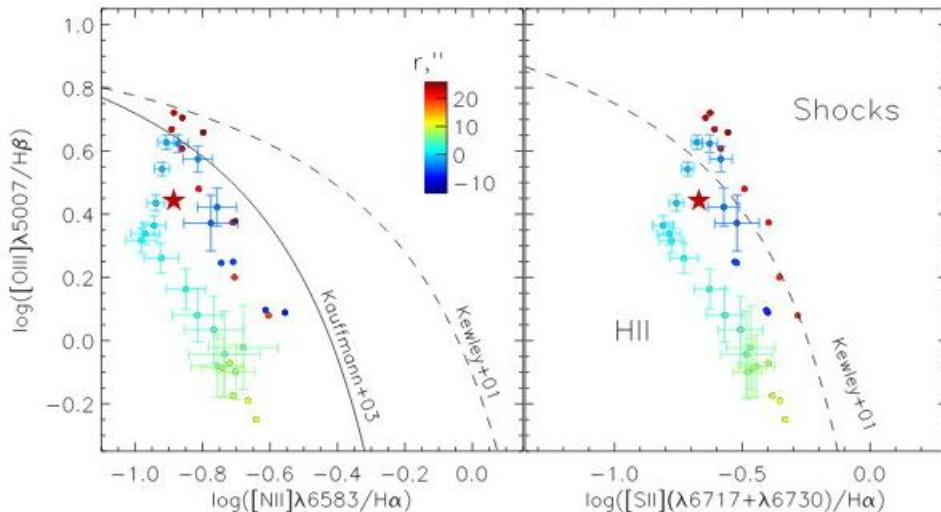
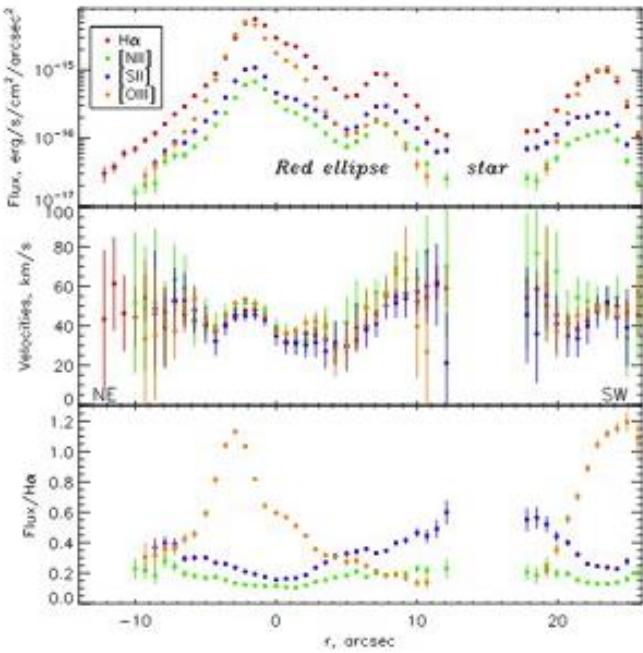


Figure 1. KPNO image of the region around the Red ellipse. The image shows the distribution of stars and the central bright cluster. A coordinate system is overlaid with RA (2000.0) and DEC (2000.0) axes, and a North arrow.



KPNO



Subaru