Astronomy & Astrophysics

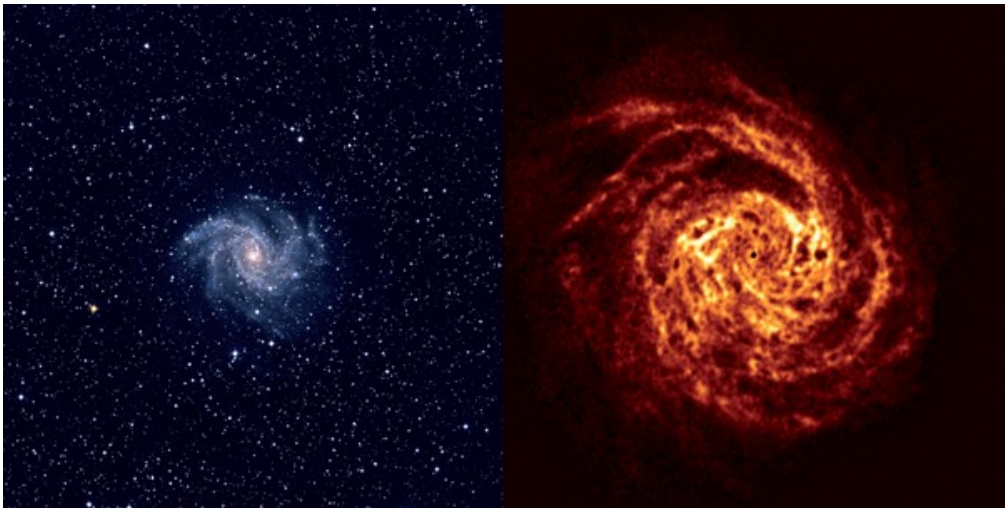
HIGHLIGHTS: this week in A&A

Volume 490-2 (November I 2008)

In section 4. Extragalactic astronomy

"HI holes and high-velocity clouds in the spiral galaxy NGC 6946", by R. Boomsma et al., A&A 490, p. 555

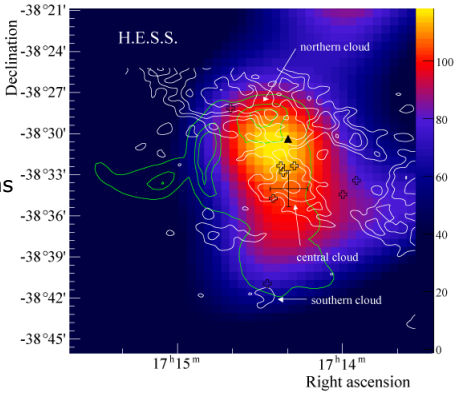
This paper presents observations in HI-21 cm of galaxy NGC 6946, among the deepest ones ever obtained for a nearby galaxy. They reveal 121 HI holes, mostly located in the inner regions. At the galactic center, they are caused mostly by star formation. In the outer parts, they may be related to a tidal interaction and/or external gas accretion.



In section 6. Interstellar and circumstellar matter

"Discovery of a VHE gamma-ray source coincident with the supernova remnant CTB 37A", by F. Aharonian et al., A&A 490, p. 685

The question of the origin of the very high-energy (TeV) gamma rays detected in or near supernova remnants by Cherenkov telescopes, such as H.E.S.S, is still very open, but one possibility is that they stem from interactions of the cosmic ray protons produced by the SNR with surrounding dense gas. The article by Aharonian et al. published in this issue does not settle the question but is consistent with the "hadronic" hypothesis.



In section 1. Letters

"An occultation event in the nucleus of the planetary nebula M 2-29", by M. Hajduk, A. A. Zijlstra, and K. Gesicki, A&A 490, p. L7

The paper reports the first detection of occultation-like events in a highly evolved, post-AGB central star of a bipolar planetary nebula. Interpreted as a (possibly resonantly driven) structure in a radius of several AU, possibly fragmented, circumbinary disk on a timescale of about 18 years based on OGLE and MACHO photometry. The authors also report photometric evidence of a closely orbiting (23 days) companion. Ingress lasts for about 100 days and the minimum lasts around a factor of 10 longer with a probable secondary minimum about 9 years later. An optical He II absorption, previously detected, may be due to the disk. The variations resemble ε Aurigae (on a similar timescale but without the detection of the supergiant) and KH 15D (a pre-main sequence system).