Astronomy & Astrophysics

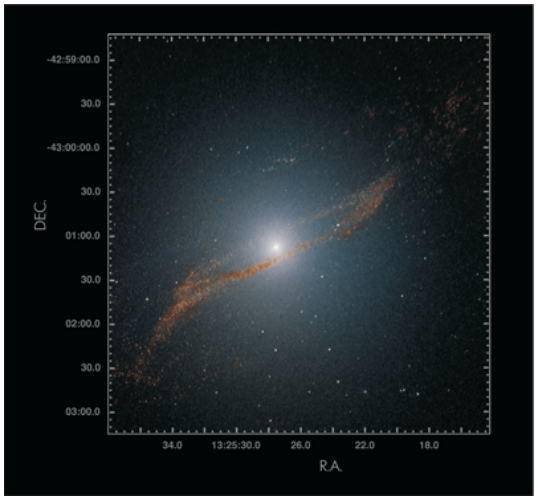
HIGHLIGHTS: this week in A&A

Volume 502-2 (August II 2009)

In section 1. Letters to the Editor

"Uncovering the kiloparsec-scale stellar ring of NGC5128", by J.T. Kainulainen et al., A&A 502, p. L5

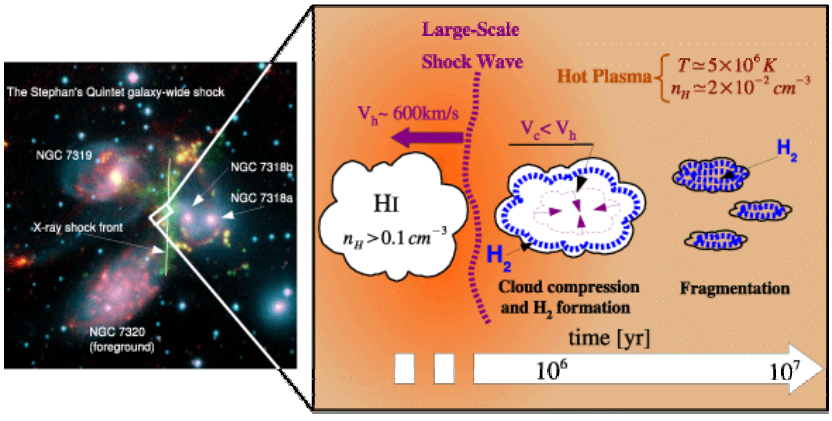
A 0.1" resolution near-infrared image of NGC 5128 (the "hamburger" galaxy Centaurus A) has been obtained with NACO on VLT. It reveals a dust-free image of a nuclear ring of 1kpc size. The ring is decomposed into thousands of separate, mostly point-like sources, the most luminous identified as red supergiants or low-mass star clusters.



In section 4. Extragalactic astronomy

"H_2 formation and excitation in the Stephan's quintet galaxy-wide collision", by P. Guillard, F. Boulanger, G. Pineau des Forets, P.N. Appleton, A&A 502, p. 515

Extremely powerful mid-IR H2 line emission has been detected towards a large-scale inter-galactic shock, corresponding to a 900km/s galaxy collision in the Stephan's Quintet (SQ) galaxy group. There is no accompanying star formation, and it appears that the H2 lines are in fact the main coolant of the post-shock gas. To explain this puzzling situation, the authors propose a scenario where two flows of multiphase dusty gas collide. The H2 gas coexists with a hot X-ray emitting plasma, but radiates more than the X-ray gas, because it is the main coolant. Dust is destroyed, soon after having catalyzed the formation of H2 molecules. While the 900km/s shock heats the diffuse gas and creates the X-ray plasma, denser gas is also formed by high pressure, experiencing slower 20km/s MHD shocks and exciting the H2 lines. This multi-phase scenario can apply to many other similar situations in galaxy collisions, or cooling flow clusters, where H2 lines dissipate the mechanical energy effectively.



In section 1. Letters to the Editor

"The young stellar population at the center of NGC 205", by L. Monaco et al., A&A 502, p. L9

Using high-resolution deep imaging with the ACS, this paper reports the discovery of a young (< 0.7 Gyr) stellar population in the nuclear region of NGC 205. This dE is notable for its abundance of gas and indications of a rotationally supported disk. The authors find that the rate of star formation is consistent with a recently initiated event, relative to the evolutionary timescale for the old population and possible continued bursting on a timescale of tens of Myr. The present blue population is consistent with a triggering event, possibly after first passage of the galaxy by M31.