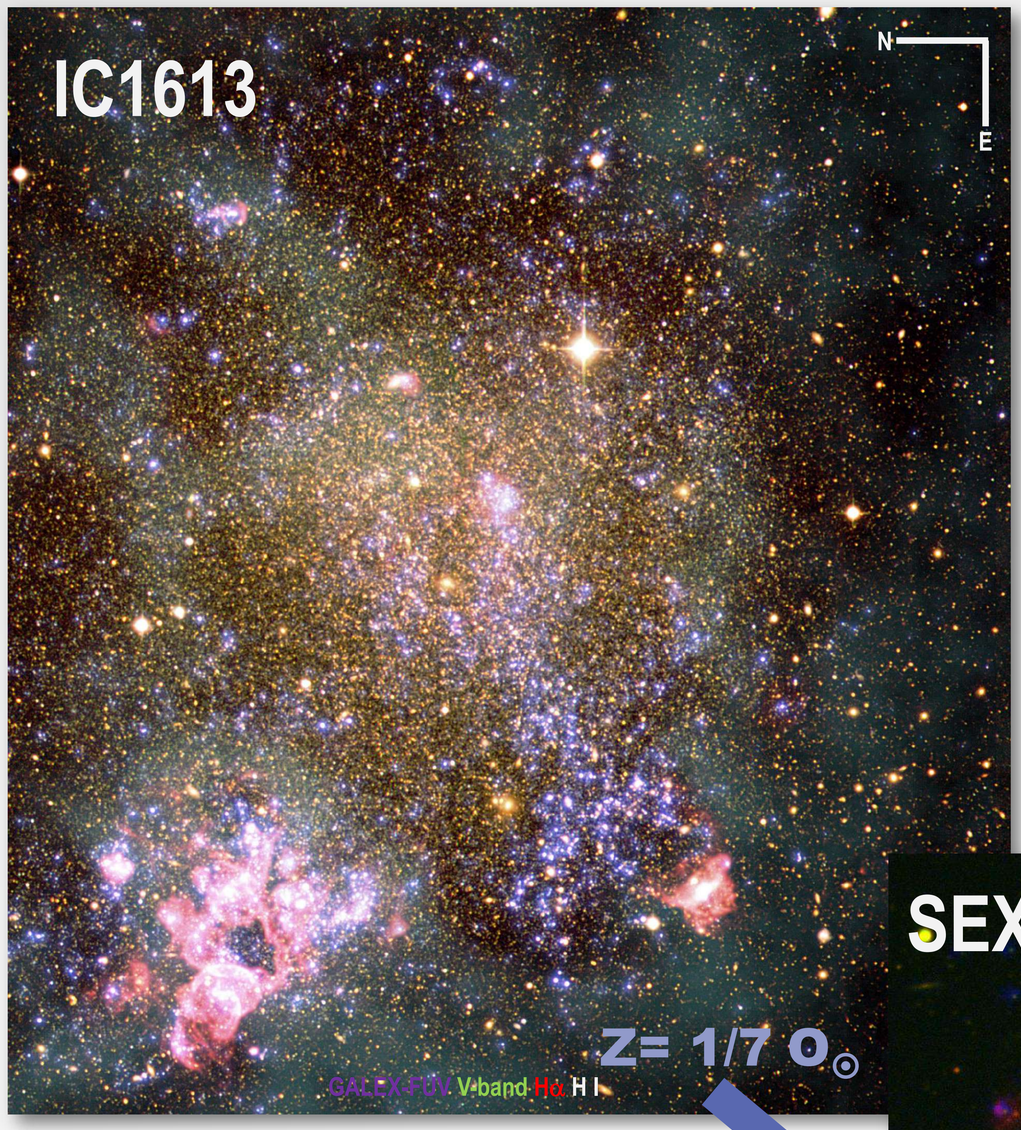
METAL-POOR DWARF IRREGULAR GALAXIES AND MASSIVE STARS

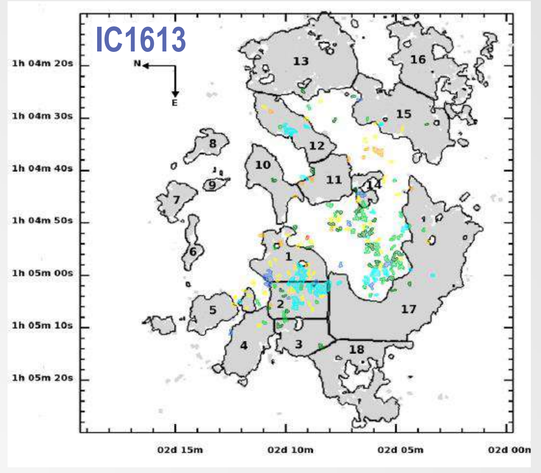
M. GARCIA[1], A. HERRERO[2,3], F. NAJARRO[1], N. CASTRO[4], I. CAMACHO[2,3]

1 Centro de Astrobiología (CAB,CSIC/INTA); 2 Instituto de Astrofísica de Canarias (IAC); 3 Univ. La Laguna (ULL); 4 Univ. Michigan

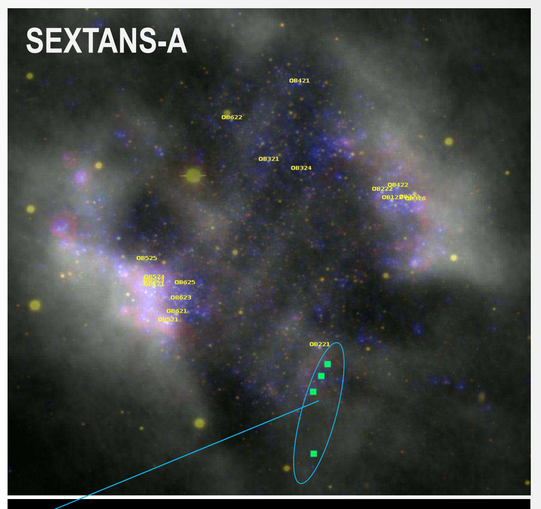
The community of massive stars is thrilled about **Local Group dwarf irregular galaxies** (dIrr). They are a reservoir of **metal-poor massive stars** that serve to understand the **physics** of their higher redshift siblings and **pop.III stars**, interpret the farthest, most energetic **SNe and GRBs**, and compute **feedback** through Cosmic History. Along the way, we became interested in the **recent star-formation history and initial mass-function** of the host dIrr's, their **chemical evolution**, and **gas and dust content.** Our team is working to unveil and characterize with spectroscopy the OB-stars in IC1613, Sextans-A and SagDIG, that form a sequence of decreasing metal content. We showcase some results to stimulate synergies between both communities.



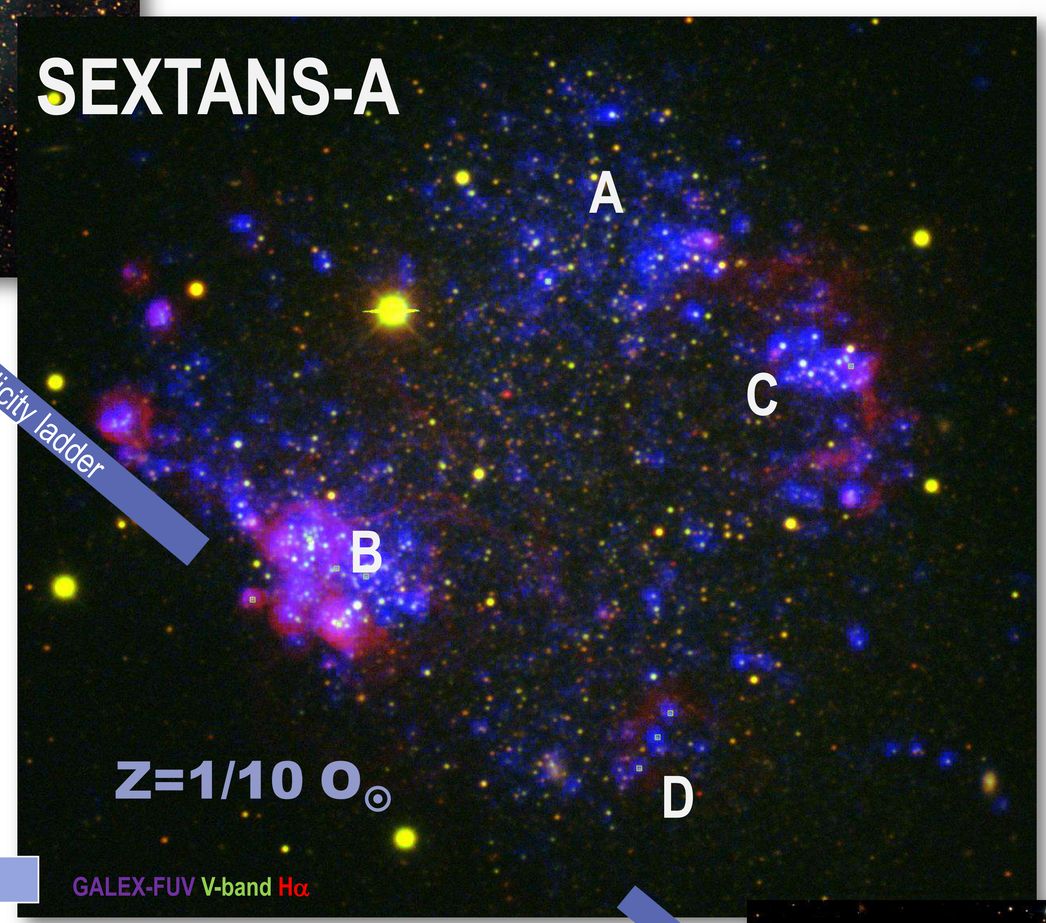
Young massive stars and H I, an intimate connection:
The apparently random location of OB-stars, sometimes far from the optical center of the studied galaxies, tightly correlates with neutral hydrogen. The youngest O-stars are located in overdensities of H I or at the ridge of the H I distribution. Our studies provide spectroscopic confirmation that star-formation is on-going in these dIrr's, and is connected to H I in a way yet to be systematically studied. Upon completion, our census will shed light on the propagation and trigger mechanisms of star-formation, whether they differ from gas-rich larger galaxies, and whether the upper end of the initial mass function is different as well.



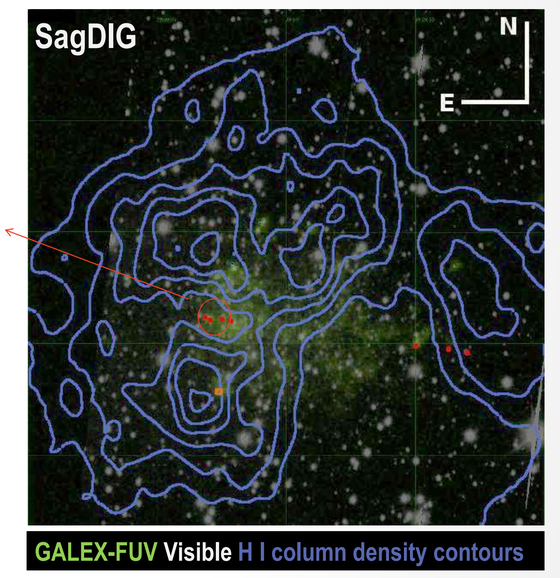
Location of **IC1613**'s **OB associations** (colors code age, cyan=youngest) w.r.t. neutral hydrogen (grey).

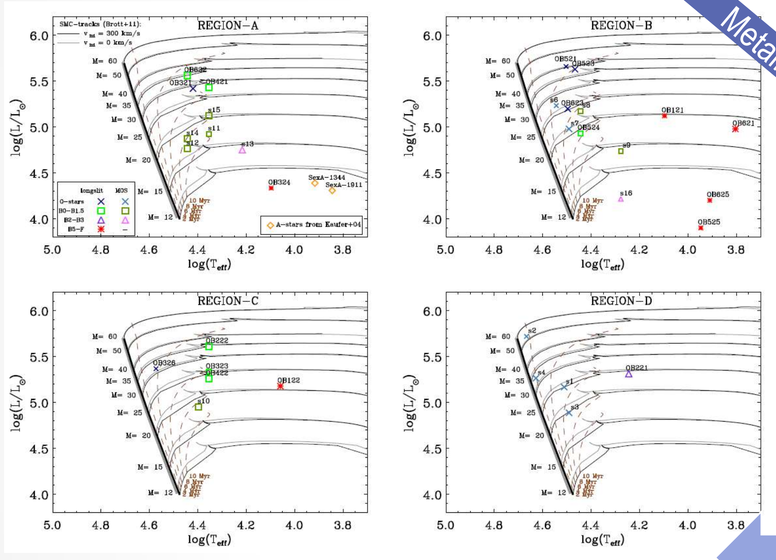


Latest confirmed OB stars *via* spectroscopy.



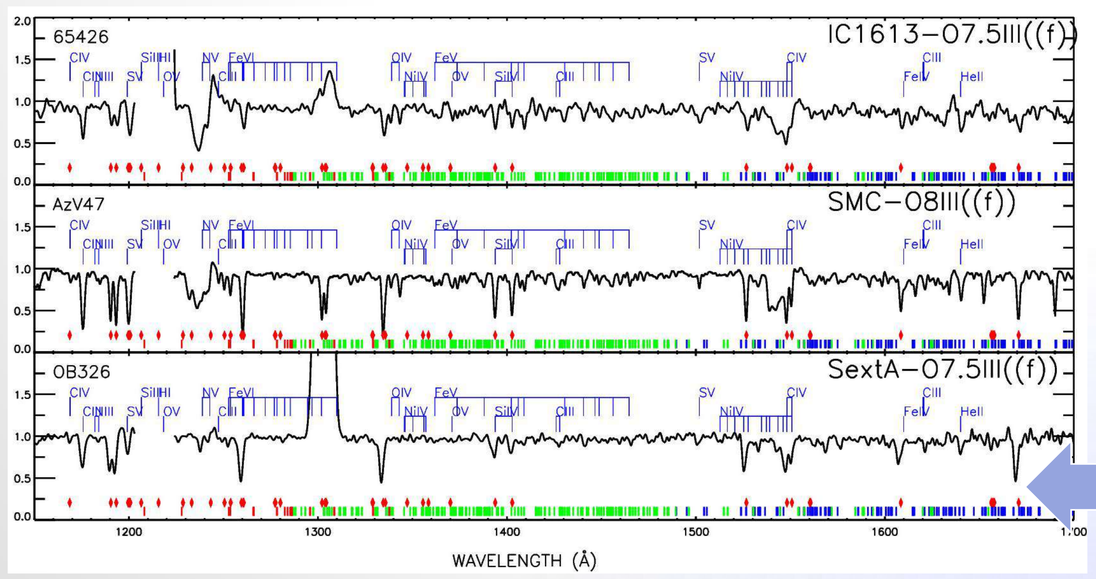
Metallicity ladder





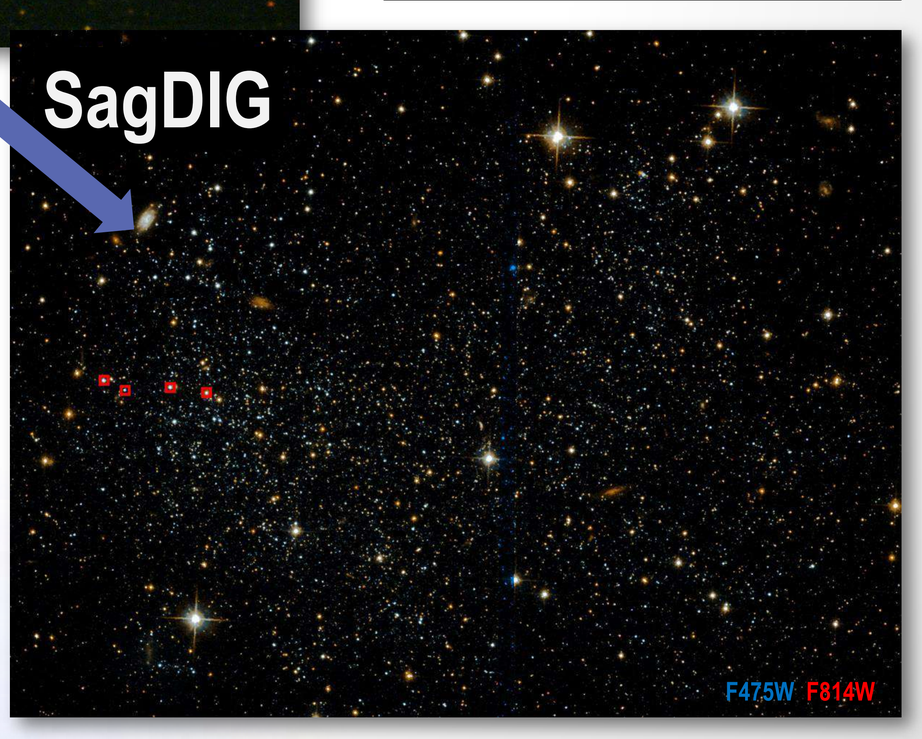
HR-diagrams of the star-forming ABCD regions identified in **SEXTANS-A**, built with confirmed spectral types

Massive stars probe the on-going star formation
and can date the latest burst to <10Myr precision.



Z=1/20 O⊙

Massive stars trace the present-day chemical composition (left):
HST-COS spectra of young O-stars yielded 1/5Fe$_\odot$ iron abundance in IC1613 and 1/10Fe$_\odot$ in Sextans-A. This showed that the present-day [α/Fe] is non-solar in IC1613.



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