

THE “ANDROMEDA'S DUST AND GAS - THE IONISED OBSERVATIONS” (ADAGIO) SURVEY

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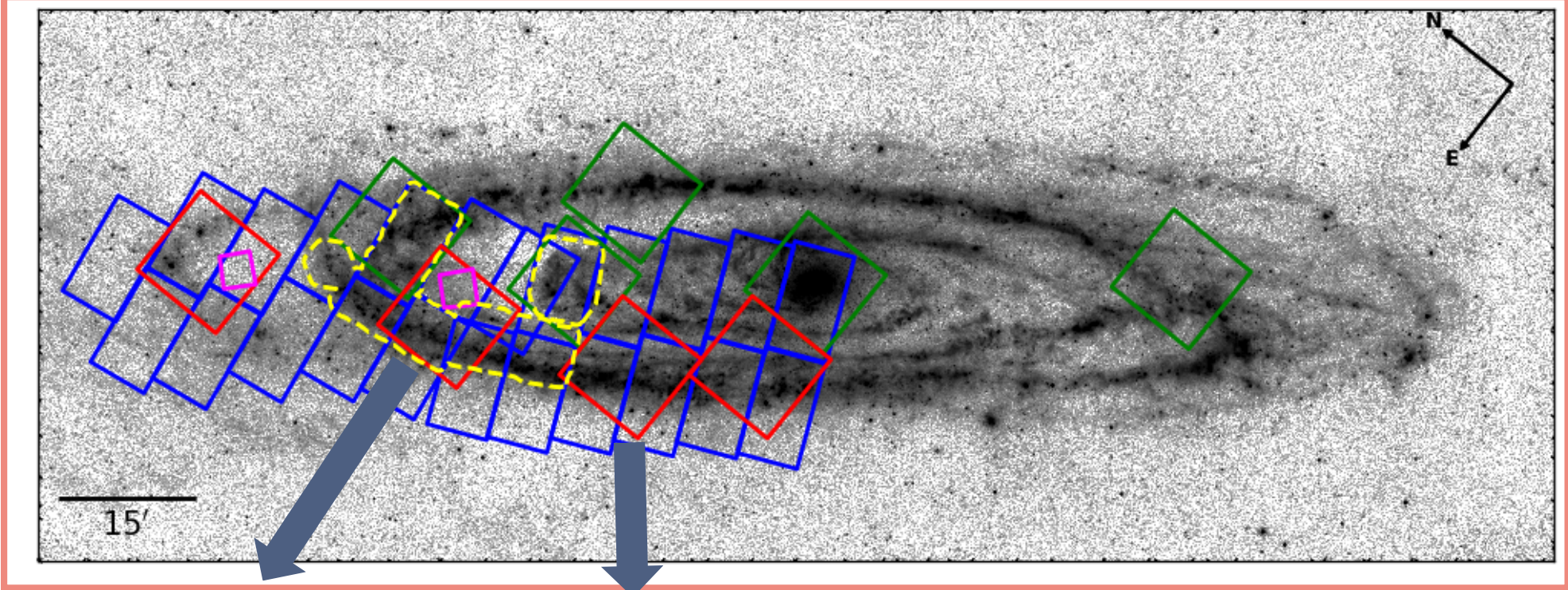
INTRODUCTION

Spatially resolved studies of galaxies give us many insights into the evolution of their local properties that differ depending on the ISM conditions, which require high-spatially resolved spectroscopic observations. The Andromeda's Dust And Gas - the Ionised Observations (ADAGIO) survey using the CFHT SITELE instrument will prove to be a big step forward in the study of the ionised phase of the ISM and will complement the ongoing investigations of the other ISM phases.

CFHT-SITELLE

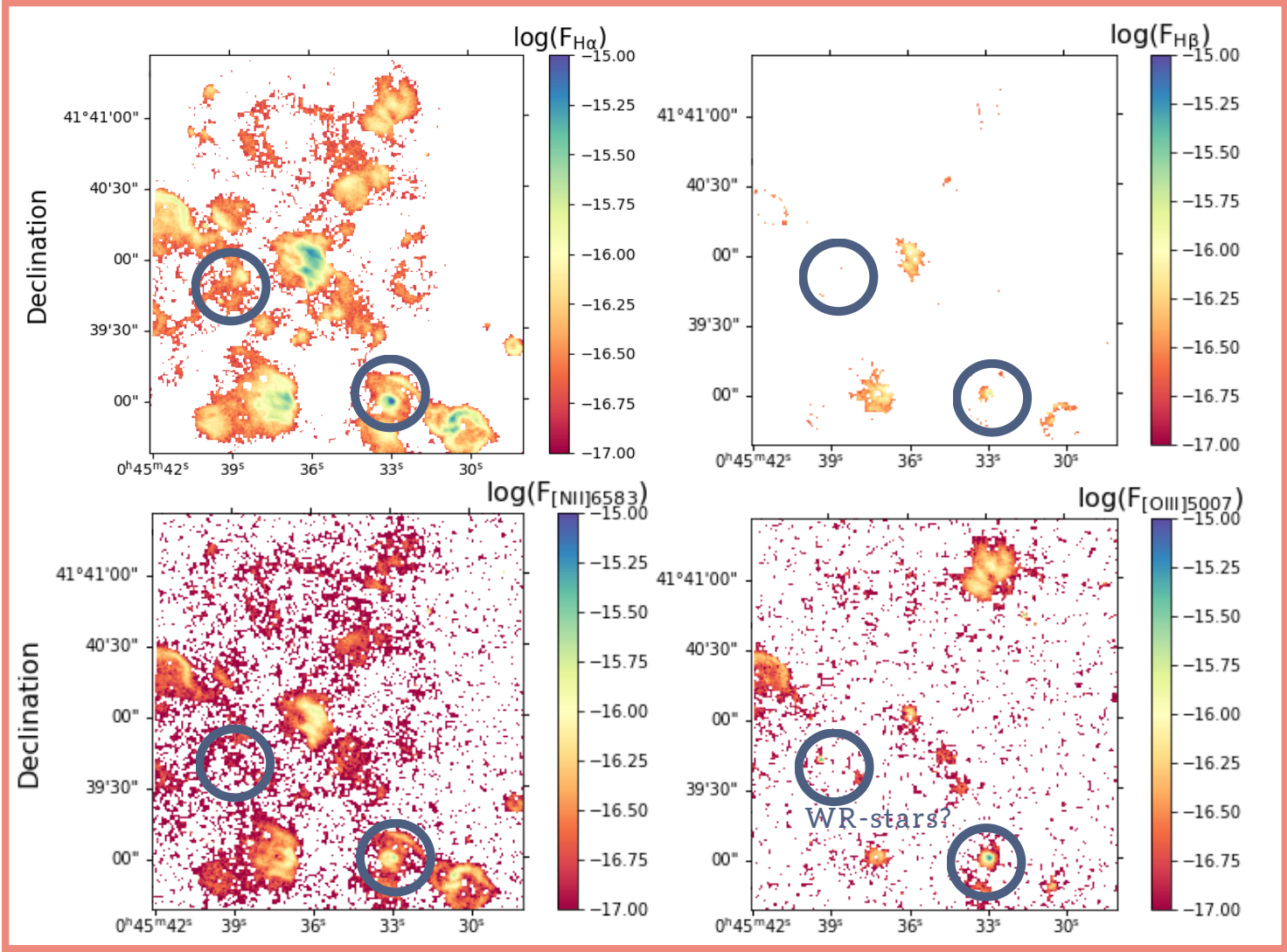
0.32" (2pc) pixel scale optical IFU covering a 11'x11' field.
SN1 (3650-3850): [OII]
SN2 (4800 - 5200): Hbeta, [OIII]
SN3 (6510 - 6850): Halpa, [NII], [SII]

ADAGIO (red), complementary to SIGNAL (green). Overlaps with HST (blue); CARMA CO (yellow), and JWST (pink).

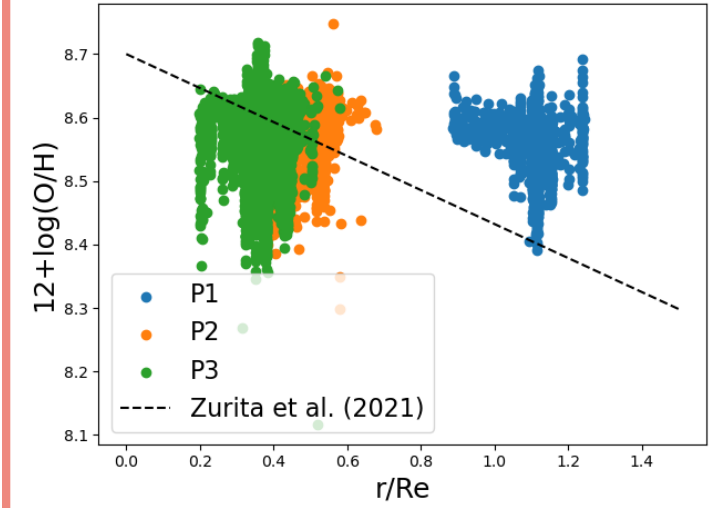


ATTENUATION AND IONIZATION IN P2

Less emission in Hbeta relative to Halpa hinting at heavy dust extinction
Spatial offset in [NII] and [OIII] hint at different sources of ionization
Line ratios test the applicability of metallicity calibrations on spatially resolved scales



Oxygen abundance radial gradient

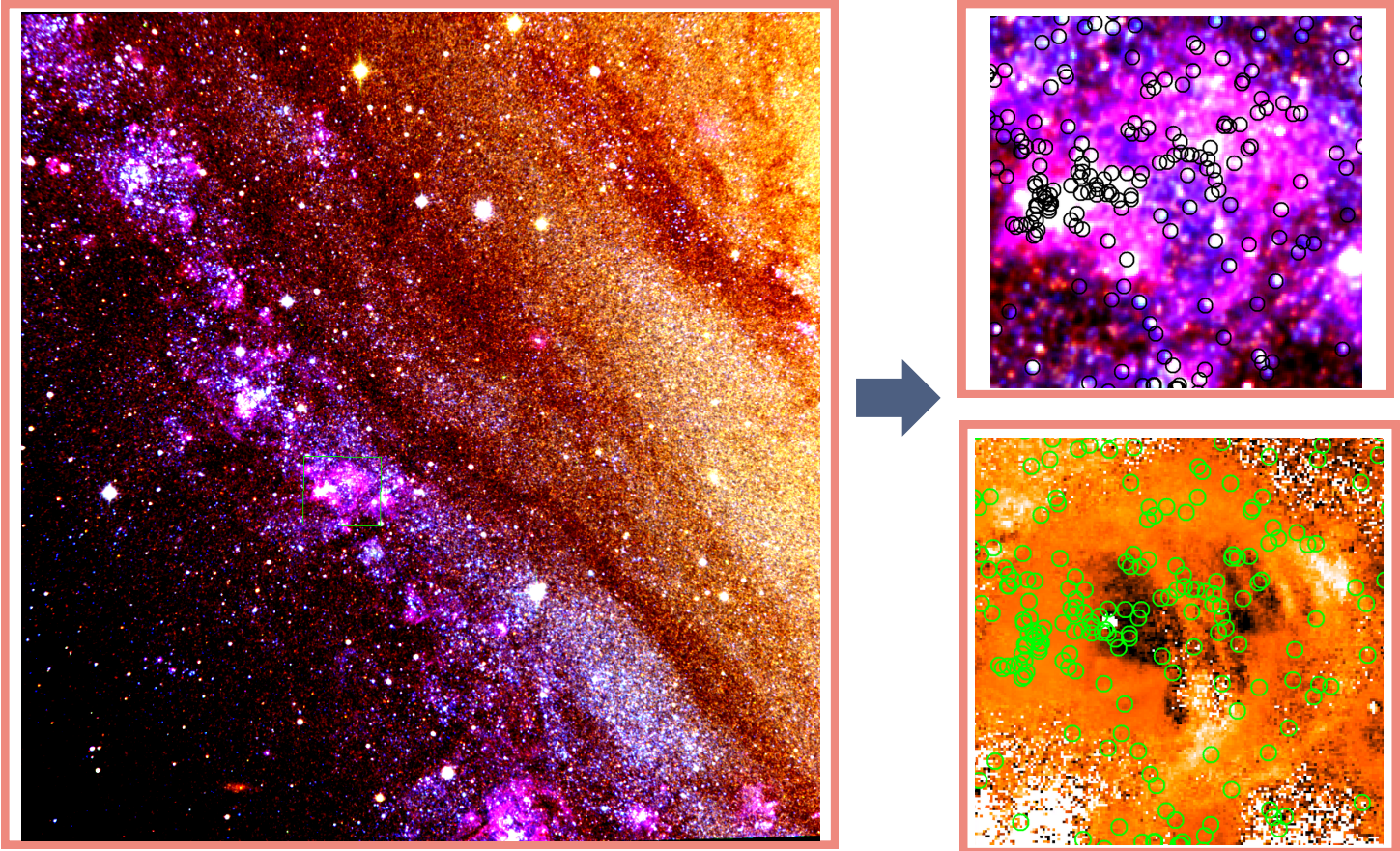


Interested? Share your thoughts and ideas here

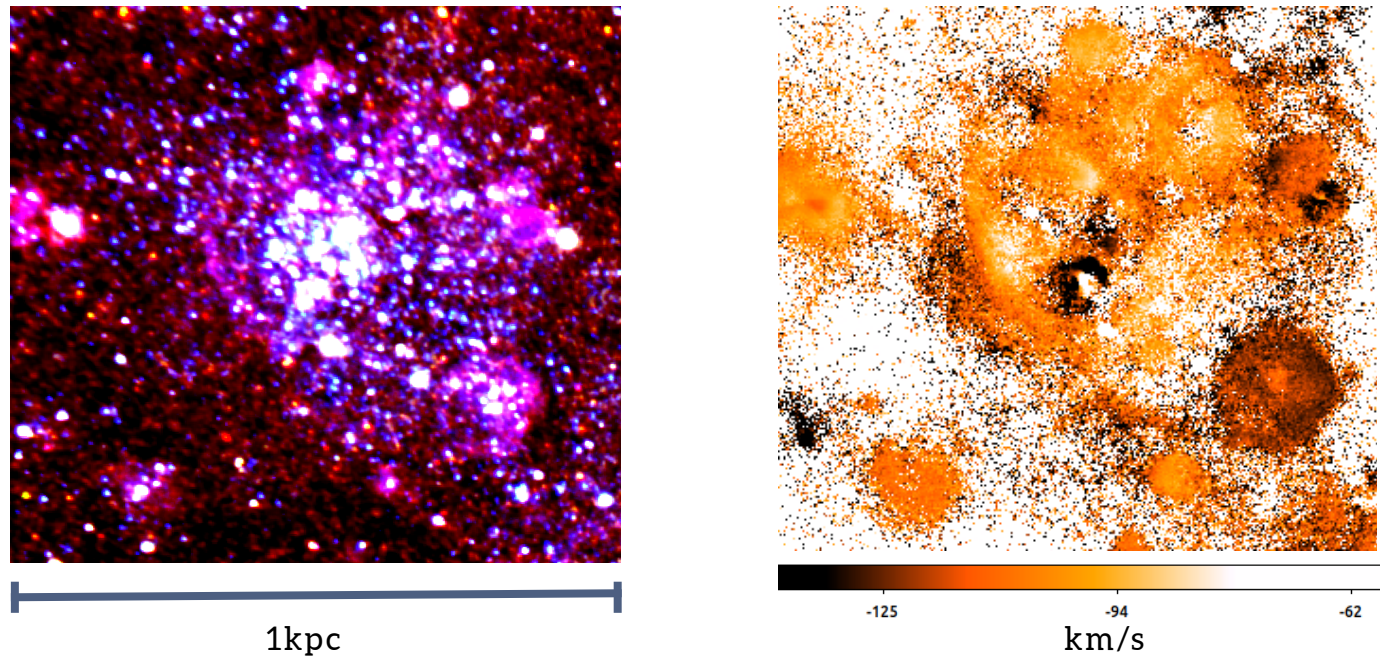


CFHT-SITELLE BUBBLES IN P3

Clear differences in structures between SN1 (blue), SN2 (green), and SN3 (red) compared to stars (contours).
Kinematic (orange) structure hints at heavily ionized bubble



Expanding HII-regions? Stars forming at the edges?



FUTURE PROSPECTS

- i) Map out ionization sources and elemental abundances inside HII-regions
- (ii) Variation in dust depending on environment
- (iii) Determine molecular cloud lifetimes and their influence on dust growth
- (iv) Identify Wolf-Rayet stars to investigate their effect on dust and metal growth