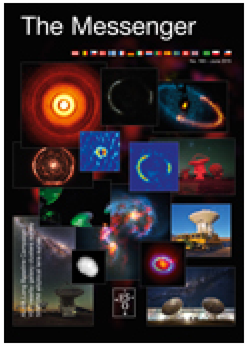
# The Messenger (ESO) – тоже интересное чтение!




June 2015 (No. 160)

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- M. Maercker et al.: **Probing the Effects of Stellar Evolution: The Dust and Gas in Detached Shells around AGB Stars**
- M. Gullieuszik et al.: **OmegaWINGS: A VST Survey of Nearby Galaxy Clusters**
- R. J. Smith et al.: **The SINFONI Nearby Elliptical Lens Locator Survey (SNELLS)**
- T. Zafar et al.: **The ESO UVES Advanced Data Products Quasar Sample: Neutral Gas Mass and Metal Abundances in the Universe**

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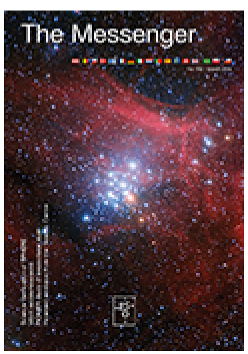


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# The SINFONI Nearby Elliptical Lens Locator Survey (SNELLS)

Smith, R. J.; Lucey, J. R.; Conroy, C. (2015Msngr.160...18S)

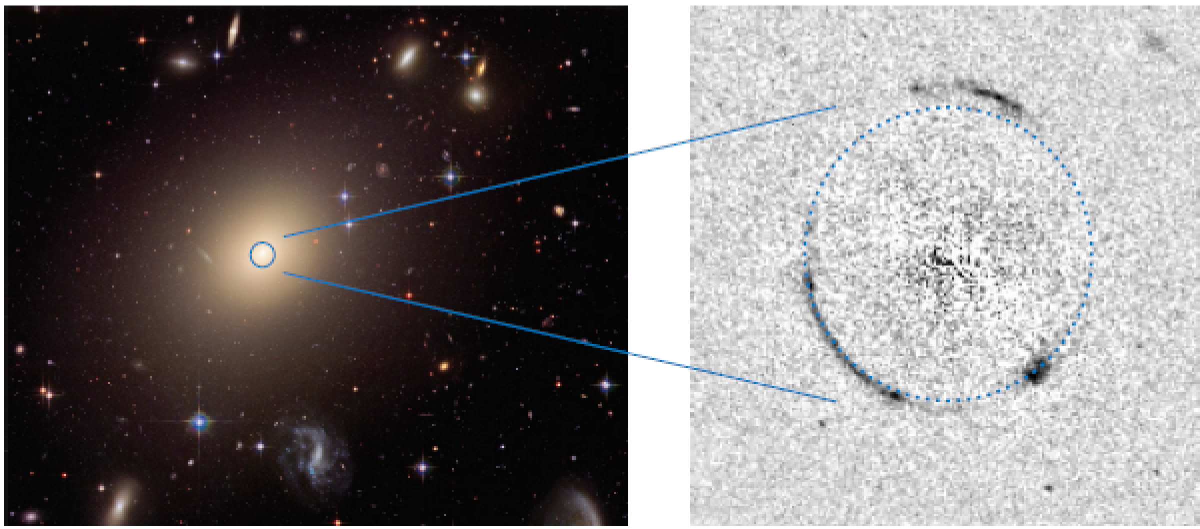


Figure 1. HST imaging of ESO325-G004, the only low-redshift strong-lensing elliptical galaxy known prior to the SNELLS programme. The left panel shows a colour composite (filters F475W, F625W, F814W) from the Hubble Heritage project. The right panel shows the $z = 2.14$ gravitationally lensed arcs (F475W data after subtracting a smooth model for the foreground lens). The Einstein radius is shown by the blue circle.

Если внимательно искать, то за многими близкими E-галатиками скрывается линзированное изображение!

Для “типичных линз” на z=0.2-0.5 R_Ein соответствует размерам галактик.

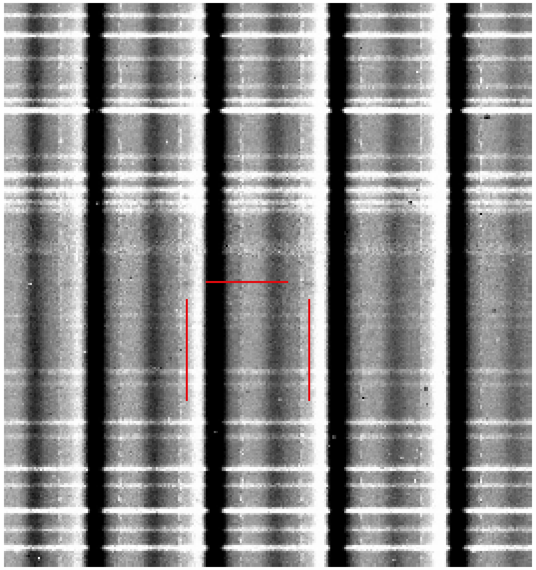
Нужны близкие (z<0.1) галатики, чтобы внутри типичного эйнштейновского радиуса R_Ein масса звезд доминировала над темной материей – тогда реально оценить Mstar и IMF!

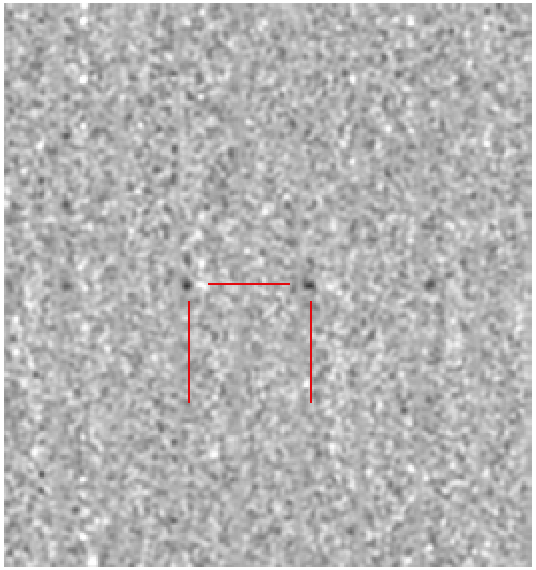
# The SINFONI Nearby Elliptical Lens Locator Survey (SNELLS)

SINFONI: поиск линз в центрах E-галактик на масштабах 1-3''
NIR: Halpha, [OIII] на z=2-3

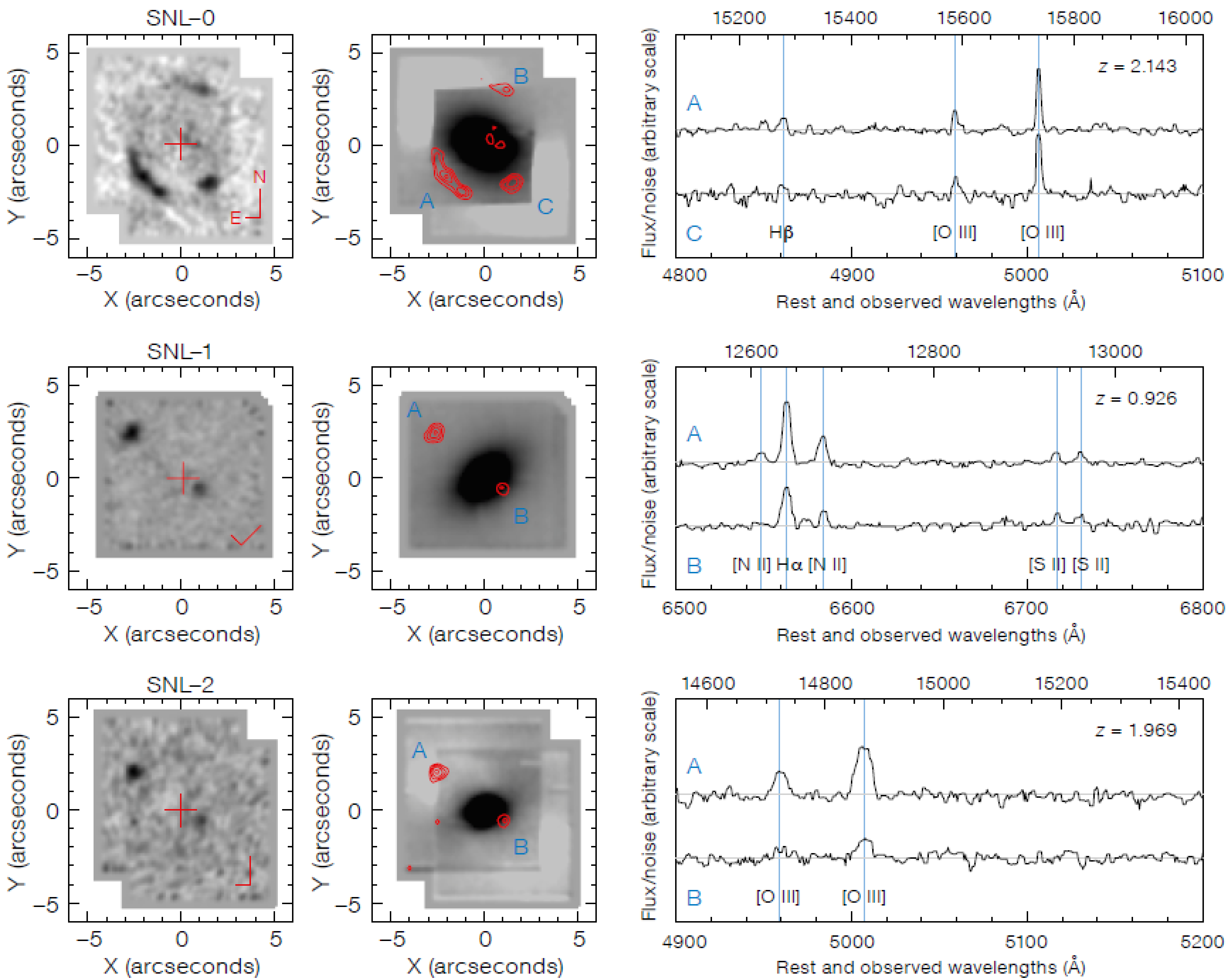
Target sample:
SDSS, z<0.055 sigma>300 km/s
без эмиссий, и центральных галактик скоплений

27 targets, including the previously known lens, ESO325-G004.
8x8 FOV,
two pointings, offset by 2.3 arcseconds, in J-band and two in H-band, with a single 600-s exp in each pointing





# 3 strong lenses: 2 new + an old one



# IMF constraints

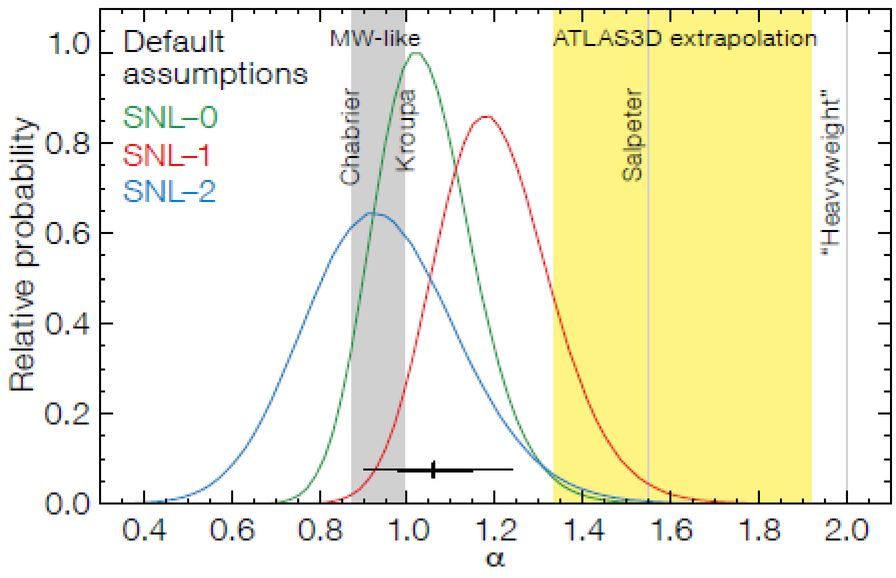



**Figure 4.** Constraints derived from the three SNELLS lenses for our "default" assumptions (see text). α is the mass excess factor, relative to a Milky Way IMF. The heavy/light bar below shows the 1σ/2σ intervals for the mean of the three SNELLS galaxies. All three galaxies have a mass-to-light ratio consistent with a Kroupa IMF. For comparison, the yellow shading indicates ±1σ in α expected at the mean velocity dispersion of our sample, 345 km $s^{-1}$, based on the trend reported by Cappellari et al. (2013). From Smith et al. (2015).

Точность измерения масс линз: 5-10%
DM fraction: 16–26%. (EAGLE, Schaller et al., 2015).

alpha=mass excess factor

Возраст галактики – и напрямую по спектрам, и полагая T=10+-1 Gyr – итог один. Даже если считать вклад темной материи нулевым – все равно, избыток массы относительно IMF MW – мал. Почему такое отличие от ANTLAS-3D – не ясно :)

Дальнейшие планы:
-удвоить число известных линз
- детальные наблюдения обнаруженных (FORS2, X-SHOOTER)

# Gas accretion from halos to disks: observations, curiosities, and problems

Bruce G. Elmegreen

## IC10: взаимодействие/аккреция

arXiv:1511.05811v1

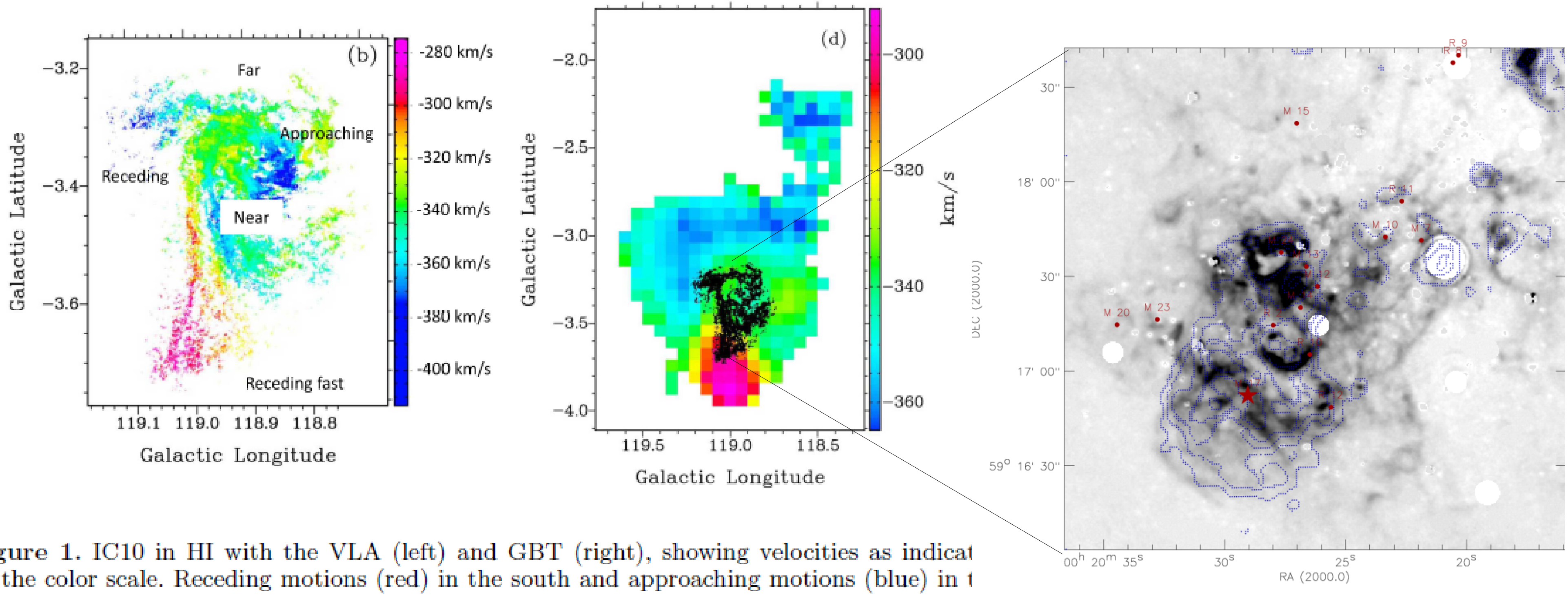



**Figure 1.** IC10 in HI with the VLA (left) and GBT (right), showing velocities as indicat by the color scale. Receding motions (red) in the south and approaching motions (blue) in t north indicate accretion toward the galaxy along two streams. The accretion rate is about equ to the star formation rate in this local group starburst. Images from Ashley et al. (2014) w labels added.

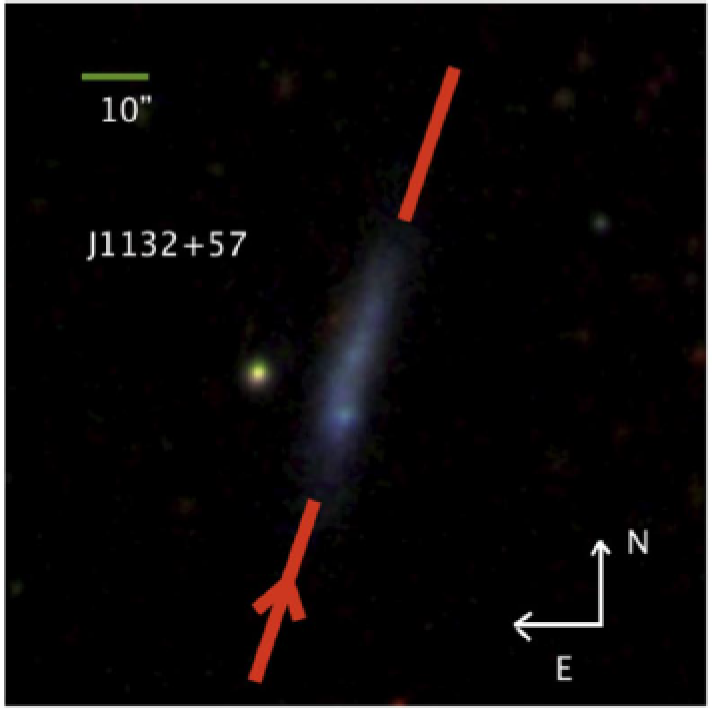
The accretion rates in the northern and southern streams can be estimated from the velocity gradients and the masses. They are 0.001 $M_\odot$ yr$^{-1}$ in the north and 0.05 $M_\odot$ yr$^{-1}$ in the south. The star formation rate is comparable, 0.08 $M_\odot$ yr$^{-1}$.

# “Головастики”

Bruce G. Elmegreen

arXiv:1511.05811v1

IC10: взаимодействие/аккреция



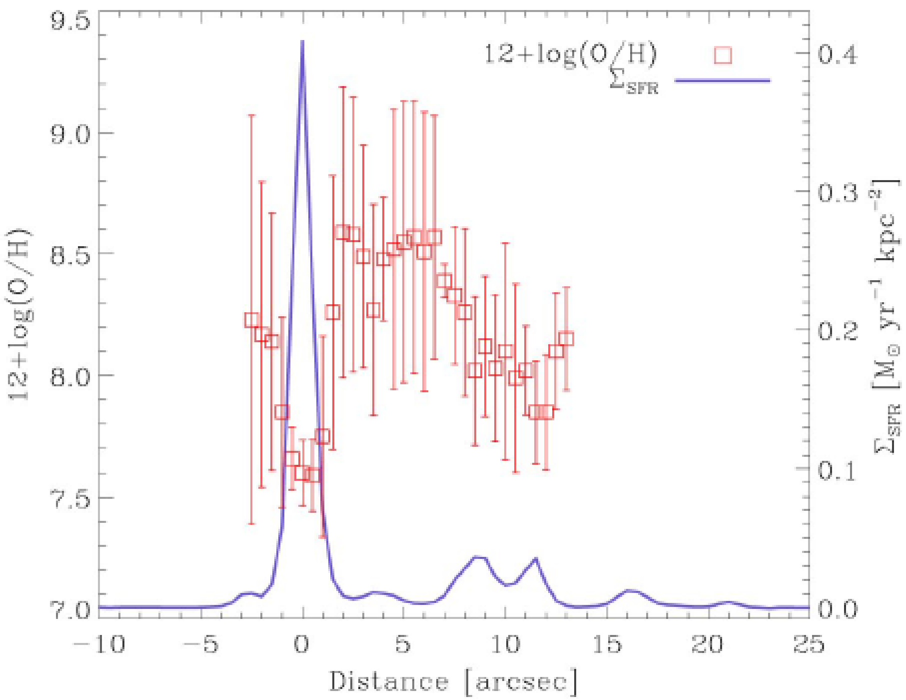




**Figure 2.** Tadpole galaxy SDSS image (left) with slit position indicated and scans of star formation rate (blue) and metallicity (red) on the right. The metallicity drops at the site of the peak star formation rate. Images from Sanchez Almeida et al. (2015).

with the OSIRIS instrument at the 10-m Gran Telescopio Canarias. The metallicity drop at the star formation hotspot is typical for this type of galaxy. The smallness of the spot suggests a short timescale for the accretion, significantly less than a disk orbit time, or $\sim$ 100 Myrs. The excess star formation rate corresponds to an excess gas mass in an accretion event which is consistent with the decrease in metallicity compared to the rest of the galaxy if the main disk is diluted with nearly pristine material (Sanchez Almeida