

Tracking the Yeti in the snow

Looking for metal-poor massive stars

(I know there is way too much snow in this picture
for a beach conference, but wait for it)

Dorottya Szécsi

Frontiers of Massive Stars
Ensenada
16th July 2018



Massive stars with $Z < 0.1 Z_{\odot}$



Massive stars with $Z < 0.1 Z_{\odot}$

At cosmological distances...



High-redshift galaxies & explosions



Massive stars with $Z < 0.1 Z_{\odot}$

In the Milky Way...



At cosmological distances...



High-redshift galaxies & explosions

Globular Clusters ([Szécsi+18](#))



Massive stars with $Z < 0.1 Z_{\odot}$

In the Milky Way...



Globular Clusters ([Szécsi+18](#))



Close enough...



Dwarf galaxies ([Szécsi+15](#))

At cosmological distances...

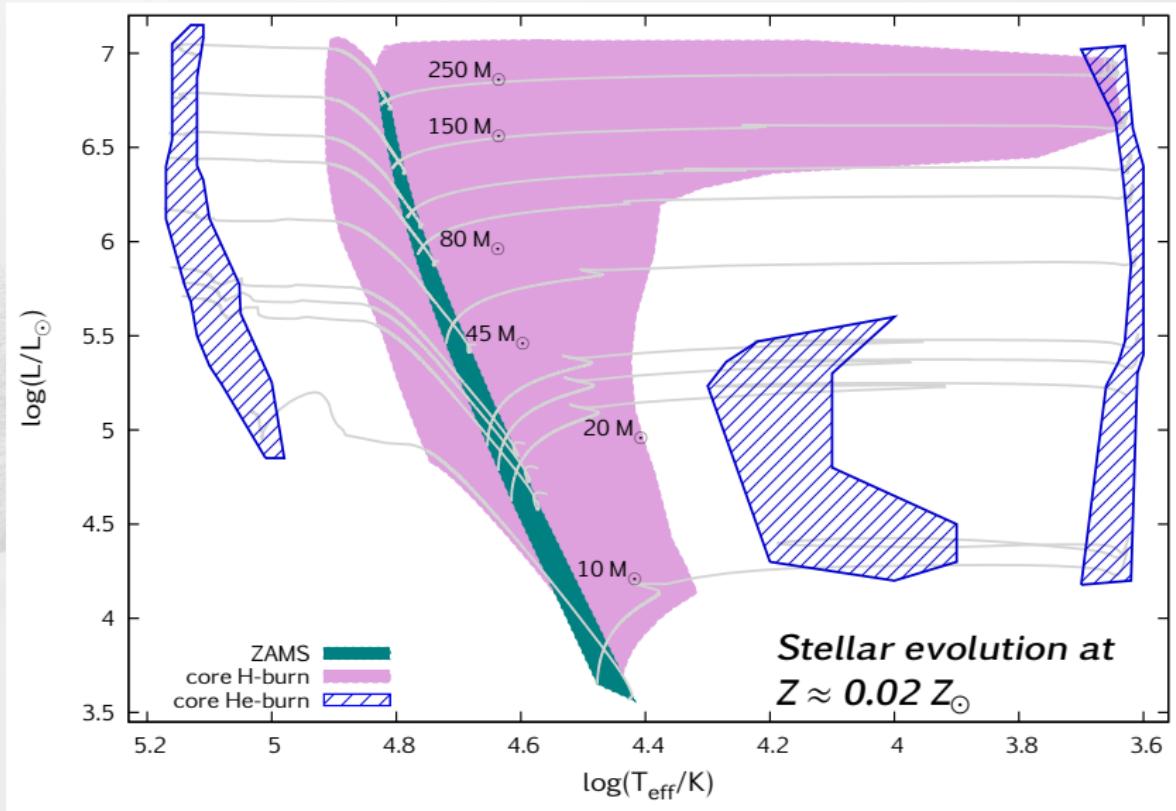


High-redshift galaxies & explosions

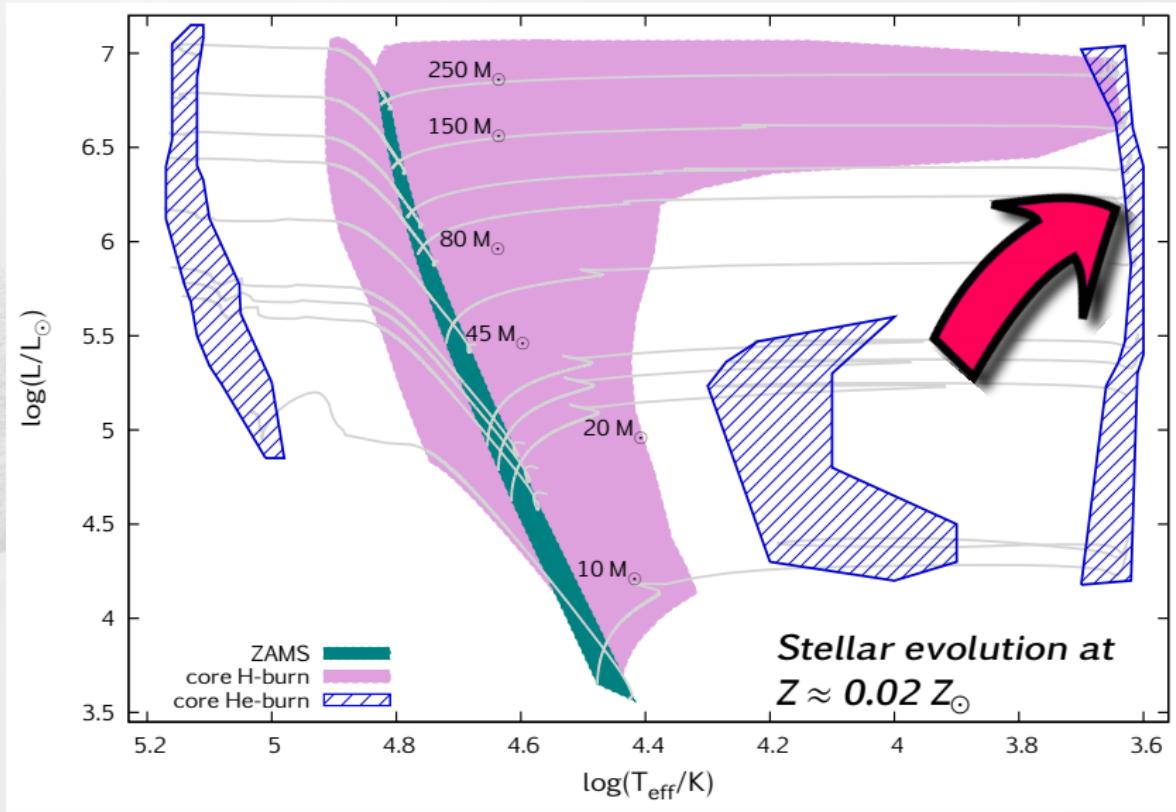
The theory of the Yeti...



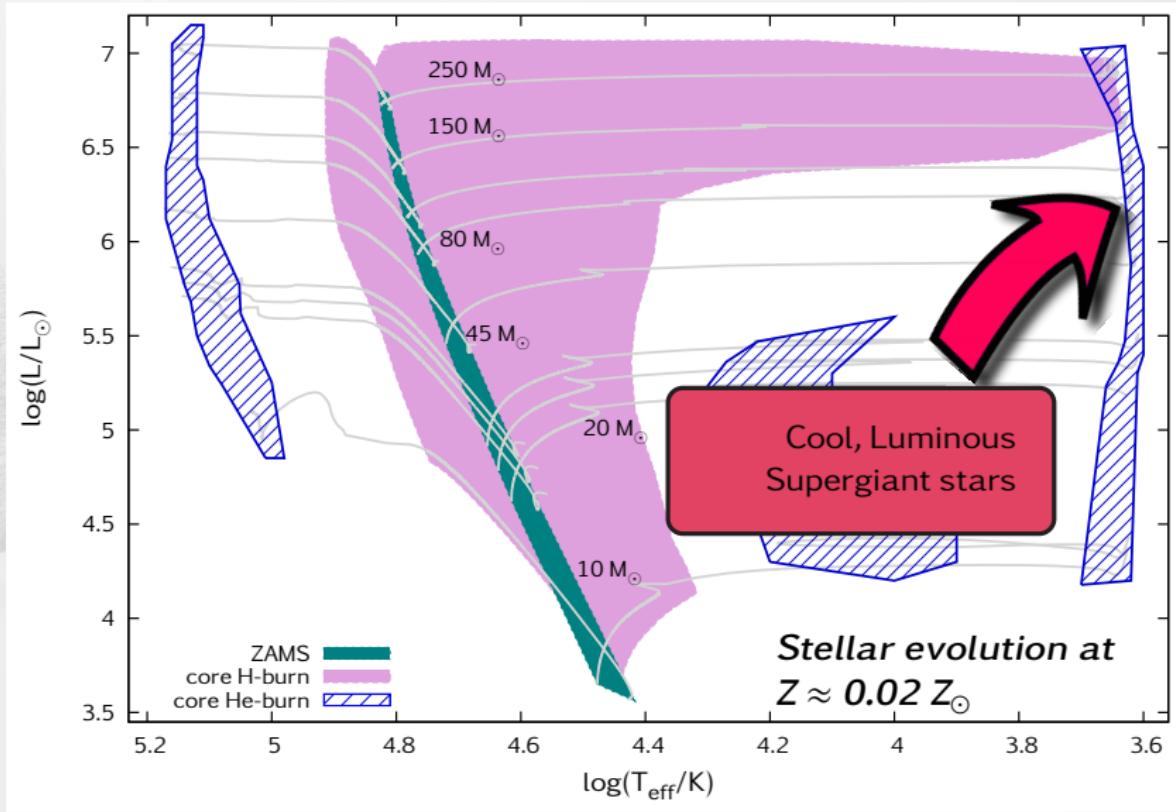
The theory of the Yeti...



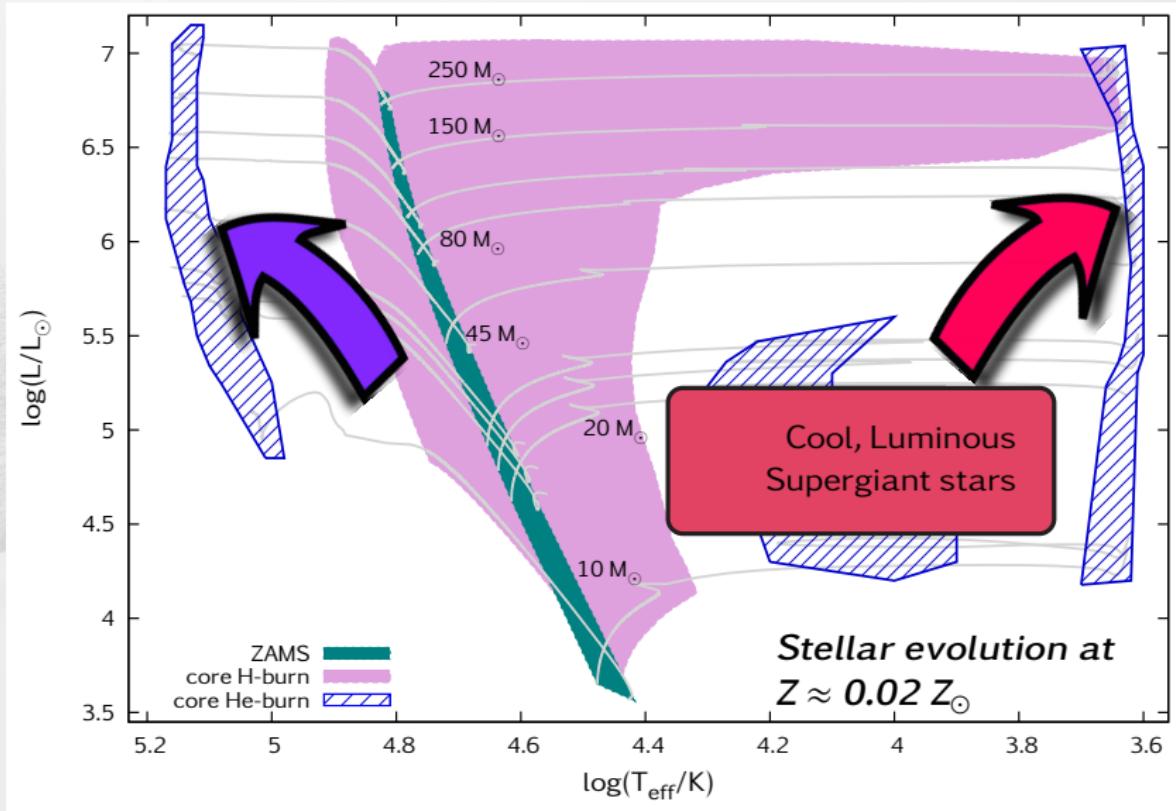
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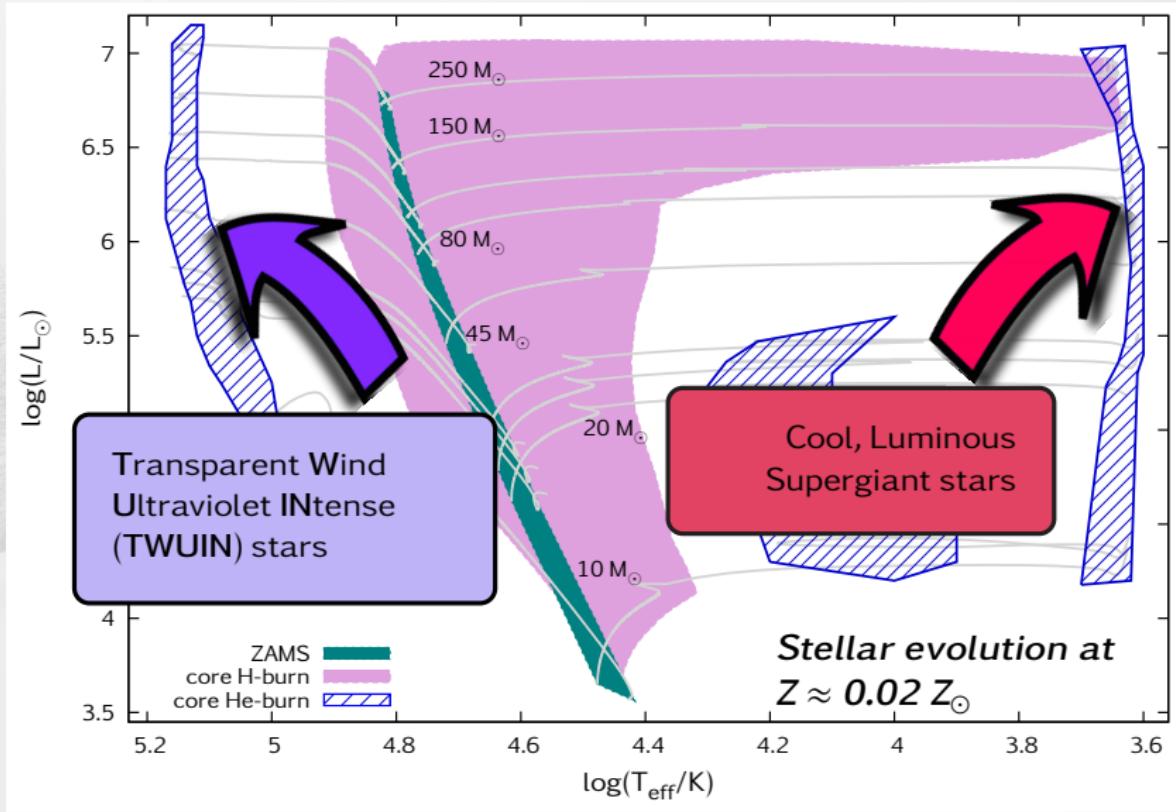
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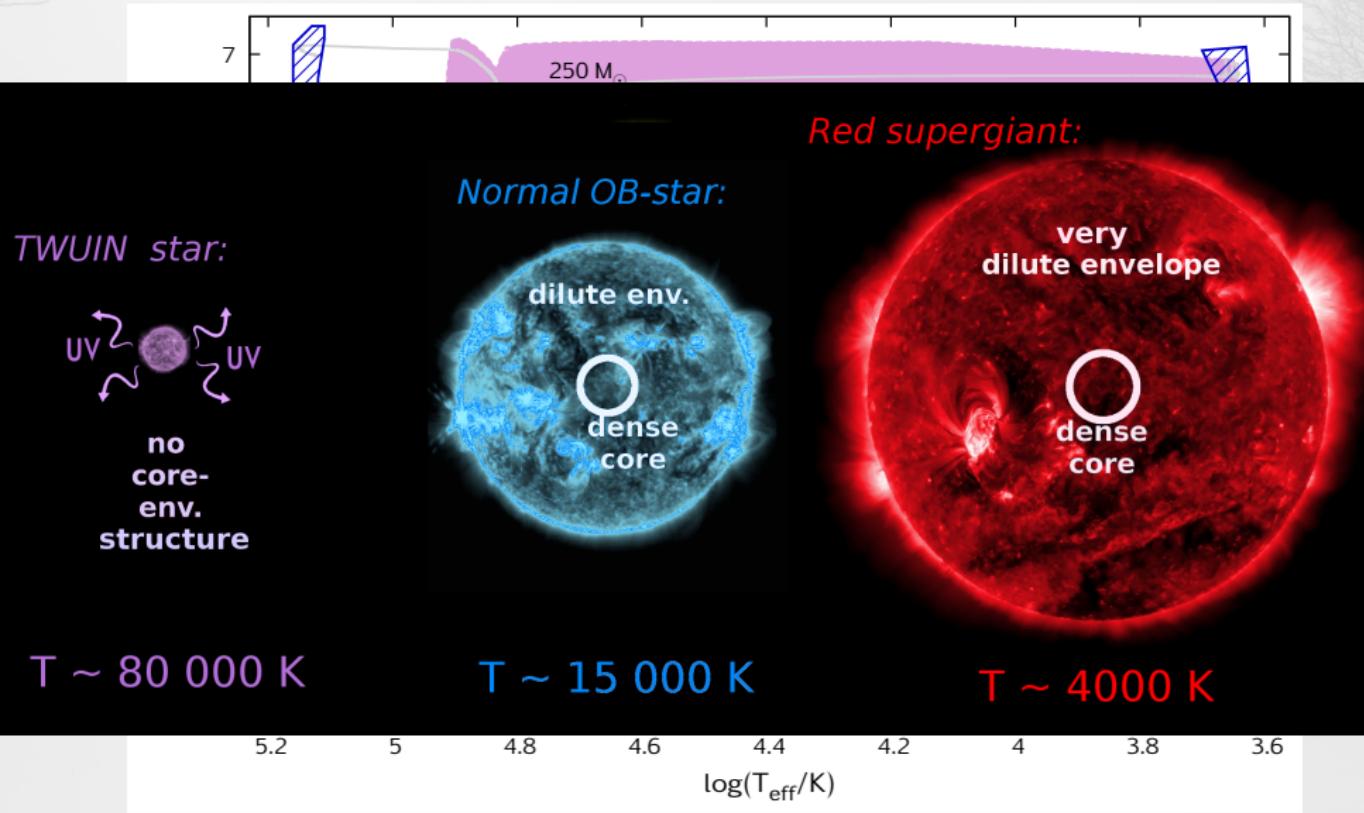
The theory of the Yeti...



The theory of the Yeti...



The theory of the Yeti...



Populations!



Populations!

At cosmological distances...



High-redshift galaxies & explosions

In the Milky Way...



Globular Clusters



Close enough...



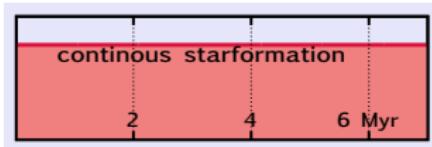
Dwarf galaxies

Simulating a population...

Simulating a population...



Simulating a population...



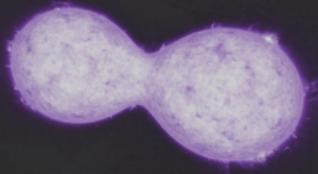
Simulating a population...

Binary populations?



Simulating a population...

Binary populations?



...COMPAS!

see Alejandro Vigna's talk
(Friday)

Transparent Wind
Ultraviolet INtense stars
(TWUIN stars)

– what do they
look like?

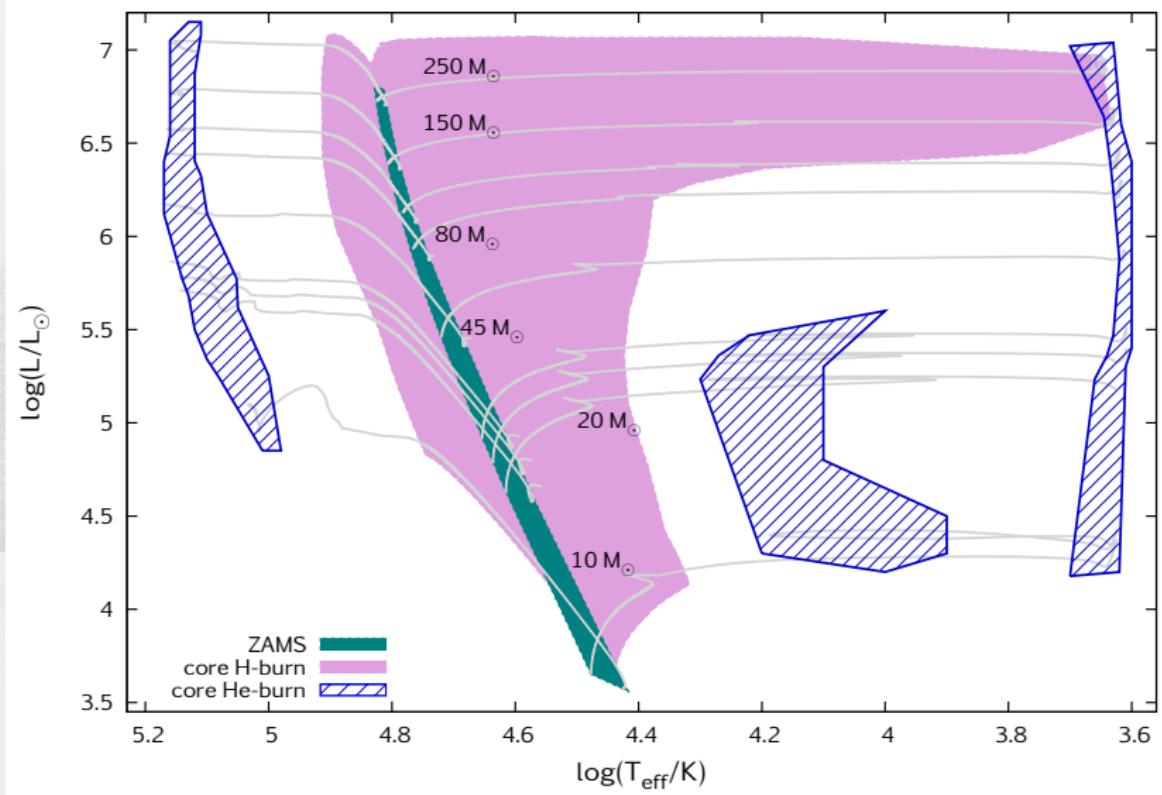


(Kubátová & Szécsi+in prep.)

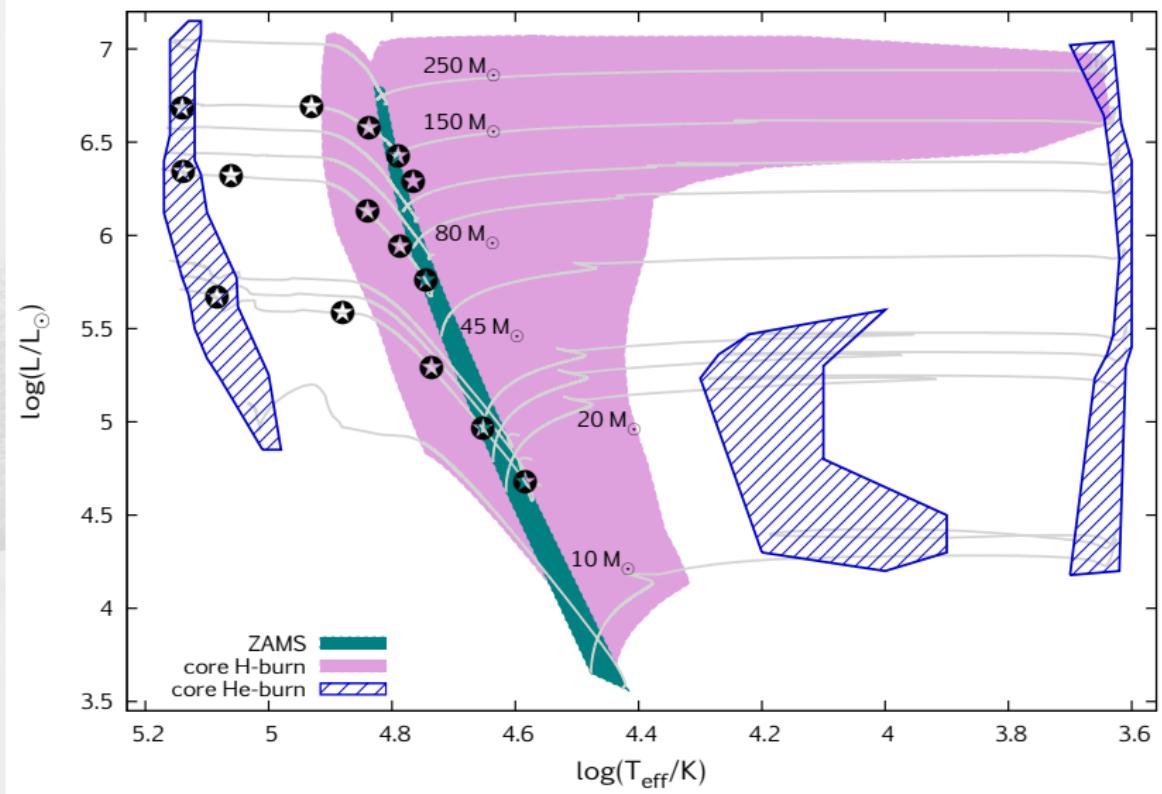
TWUIN spectra modelling



TWUIN spectra modelling

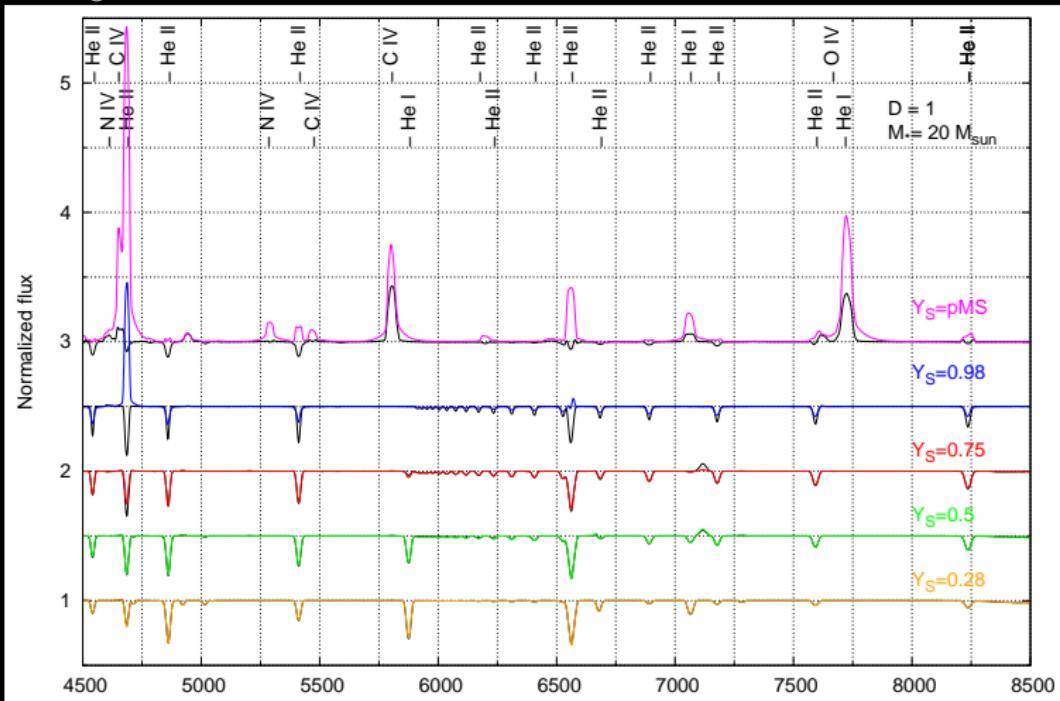


TWUIN spectra modelling



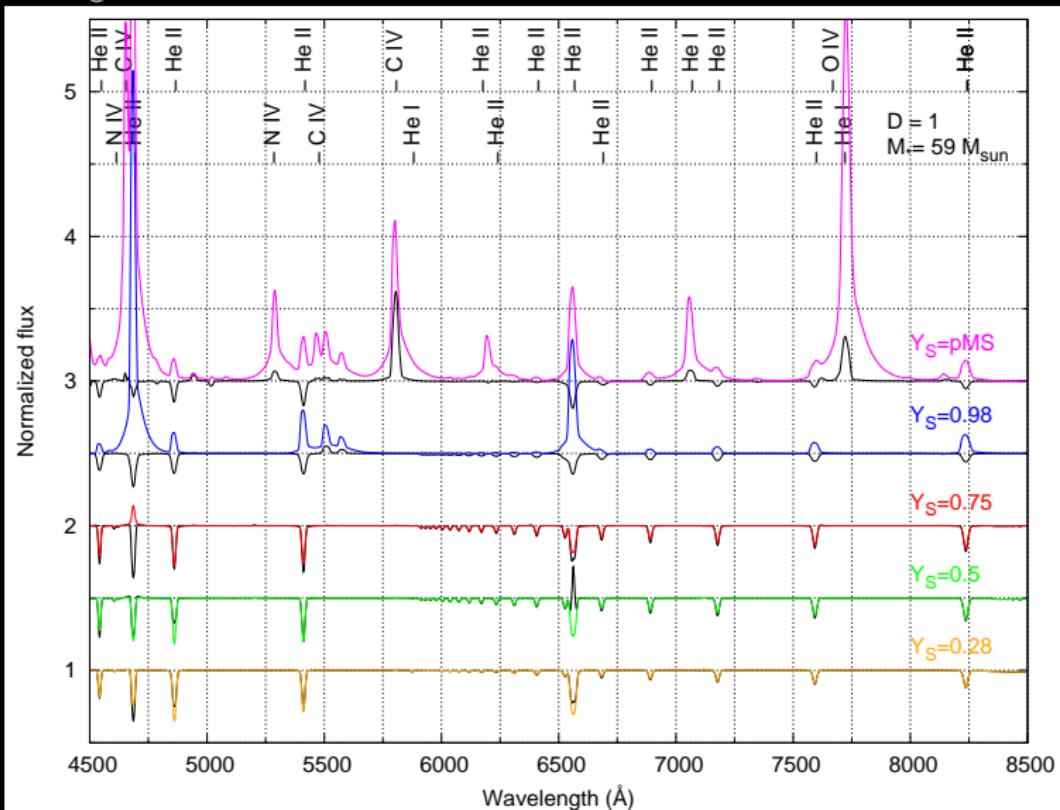
TWUIN spectra modelling

$20 M_{\odot}$



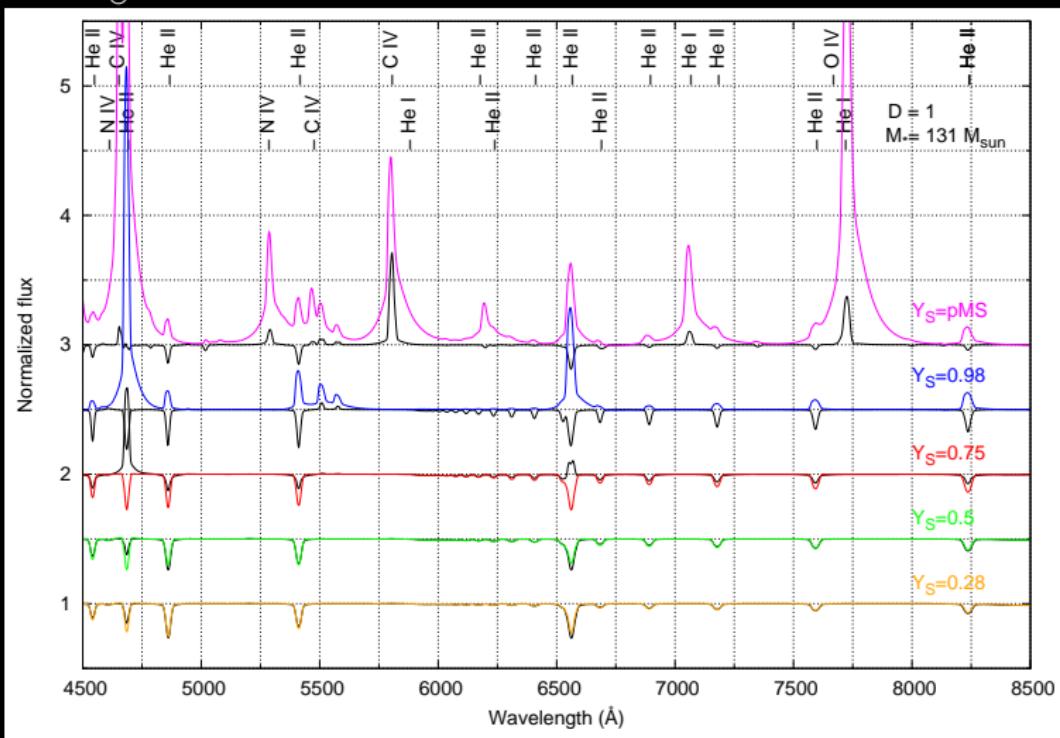
TWUIN spectra modelling

$60 M_{\odot}$



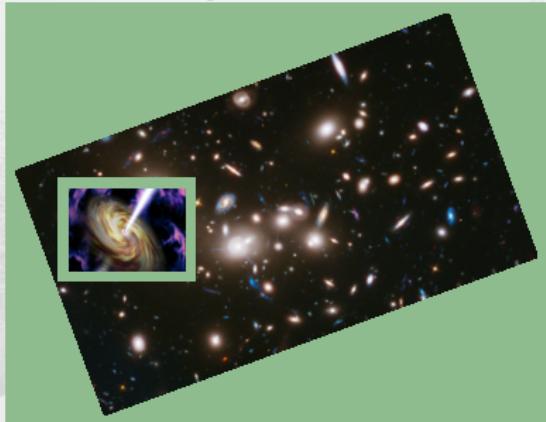
TWUIN spectra modelling

$130 M_{\odot}$



Life & death — space mission THESEUS

At cosmological distances...

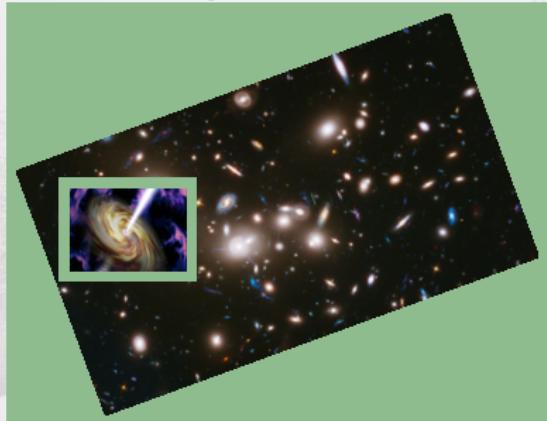


High-redshift galaxies & explosions



Life & death — space mission THESEUS

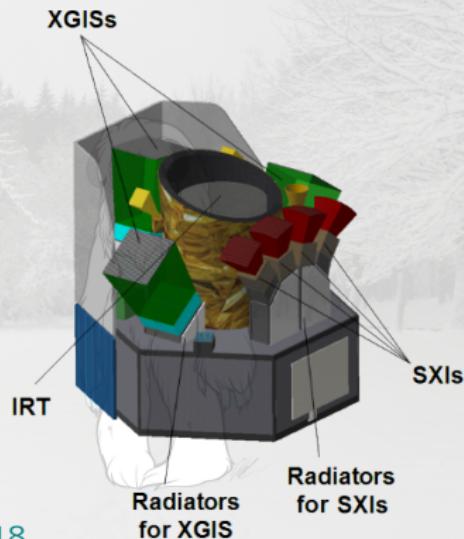
At cosmological distances...



High-redshift galaxies & explosions

Shortlisted by ESA

↓
decision in 2021



Stratta+Szécsi+18

Szécsi+17a,b

Amati+Szécsi+17



A white, fluffy Yeti girl with black ears and a yellow flower garland sits on a beach. She is wearing a blue bikini top and shorts. She is sitting on a green mat with yellow flowers. The background shows a beach with people swimming in the ocean under a blue sky with clouds.

Thank you
for your
attention!

Credit for Chilali, the Yeti girl's design: AskTheWerewolfPrince
(askthewerewolfprince.deviantart.com)