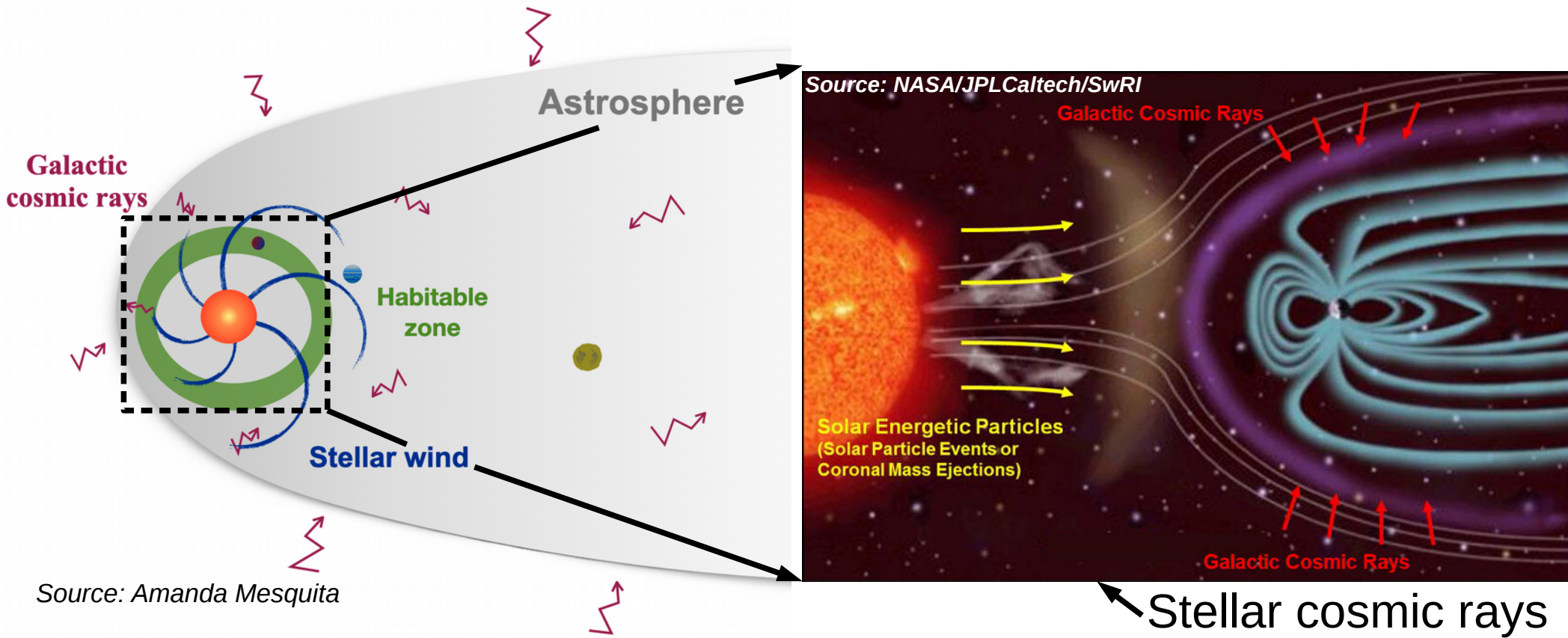


The intensity of cosmic rays at the evolving Earth and young exoplanets



Evolve stellar wind properties as a function of stellar age



ASTROflow

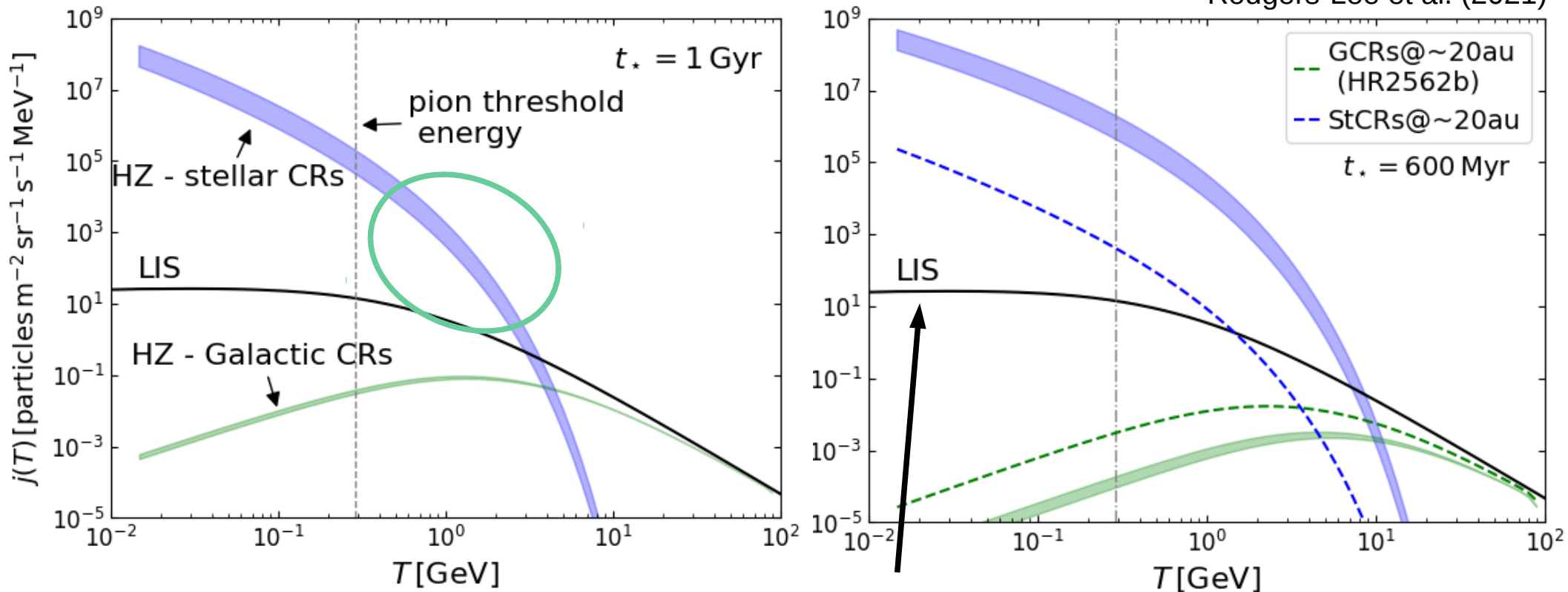
Donna Rodgers-Lee (drodgers@tcd.ie, University of Dublin, Trinity College Dublin), A. A. Vidotto, A. M. Taylor, P. B. Rimmer & T. P. Downes



Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

Stellar cosmic rays dominate over Galactic cosmic rays up to ~GeV energies

Rodgers-Lee et al. (2021)



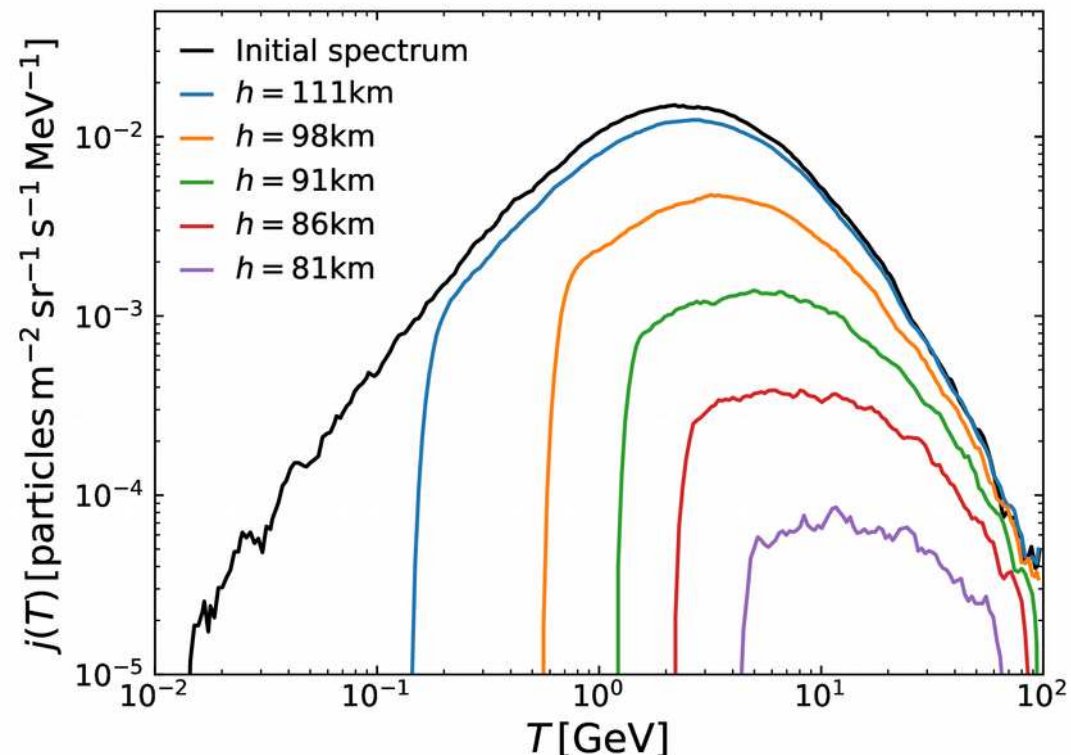
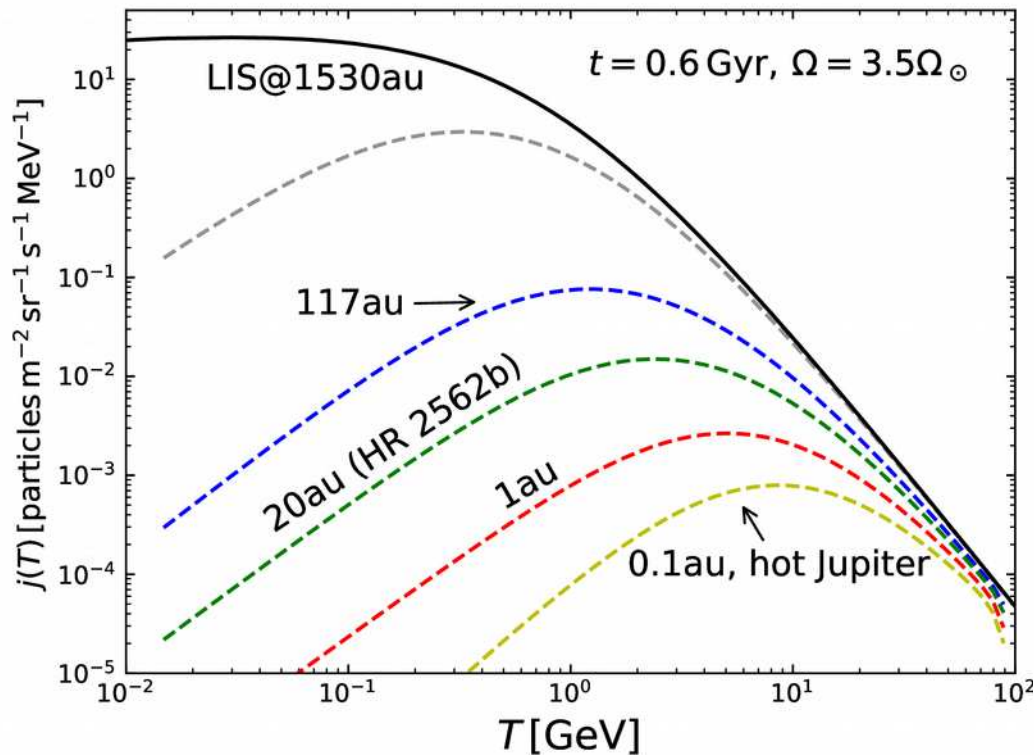
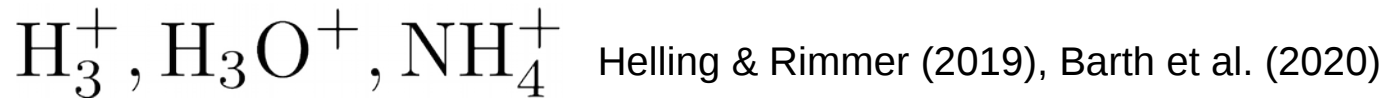
Local interstellar spectrum (Vos & Potgieter, 2015)

~when life began on Earth

HR 2562b, young
Jupiter-like planet

Galactic cosmic ray fluxes in HR 2562b's atmosphere

Chemical signatures of cosmic rays for JWST observations:



Rodgers-Lee et al. (2020)

Final step to connect with JWST is chemical modelling