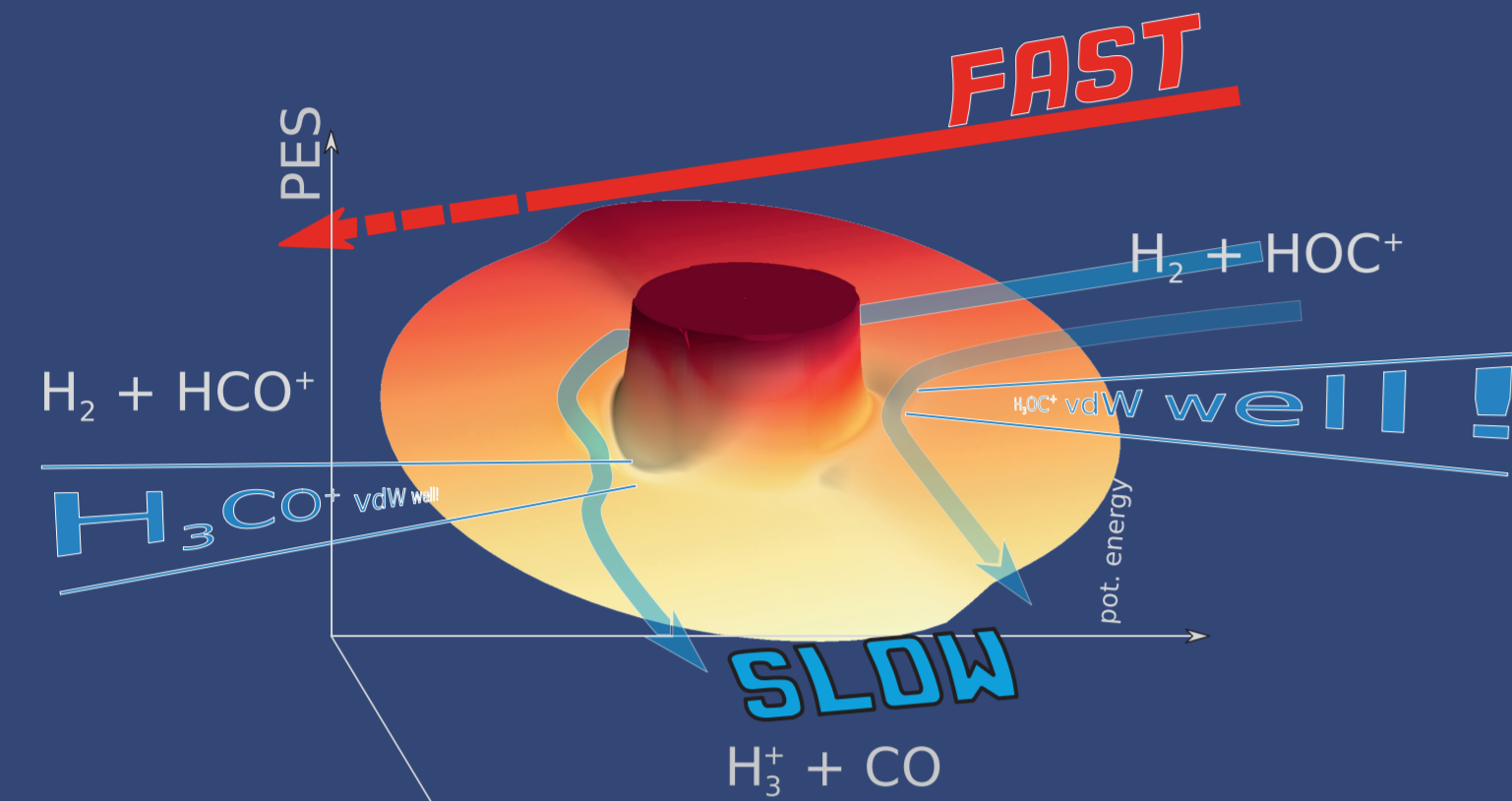


[Ultra]cold ion-neutral collisions for new [astro]chemistry

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Ion-radical collisions at low energies



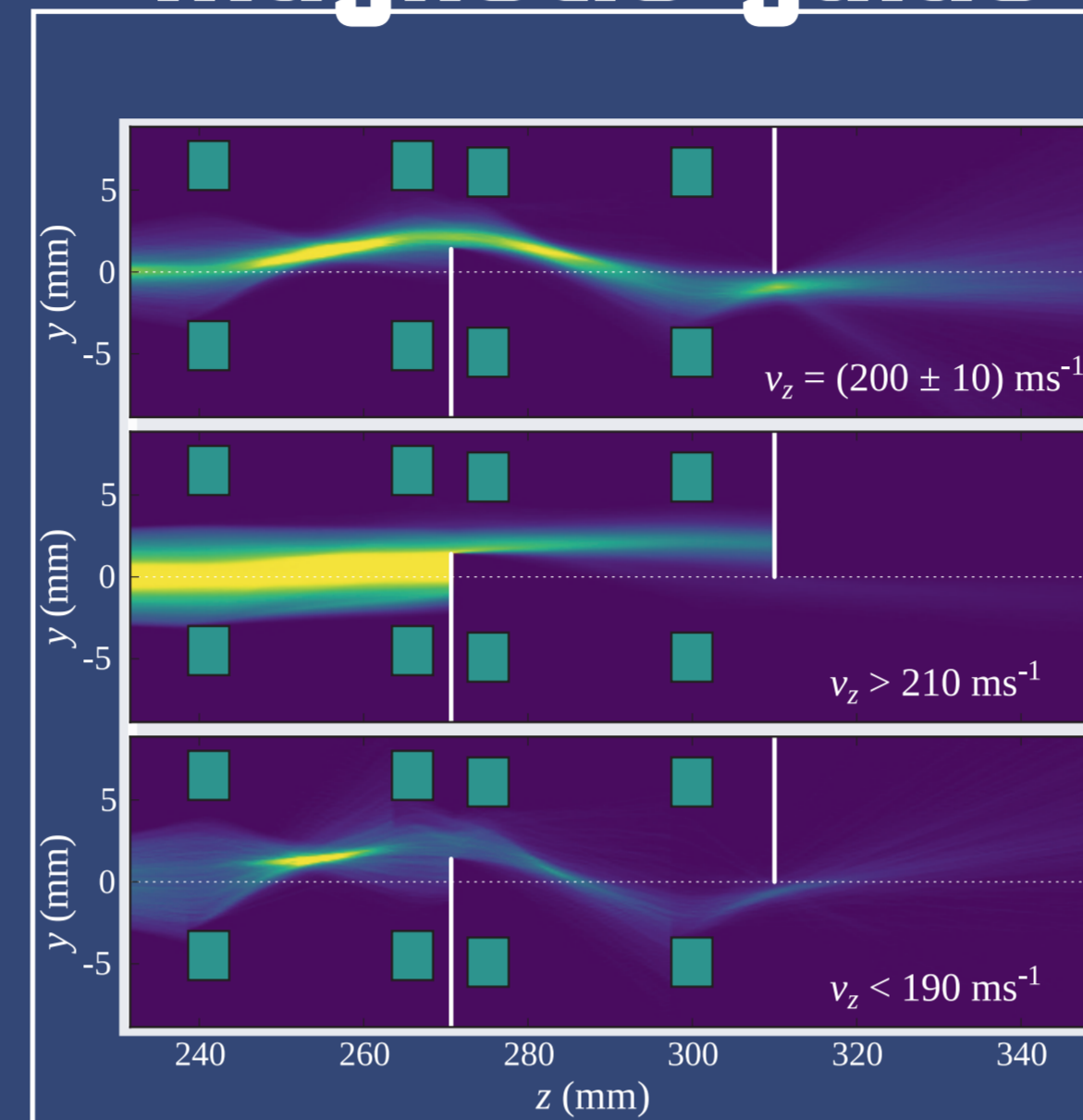
Boomerang nebula ($T = 1$ K)

ESA/NASA - <http://www.spacetelescope.org/images/heic0301a/>

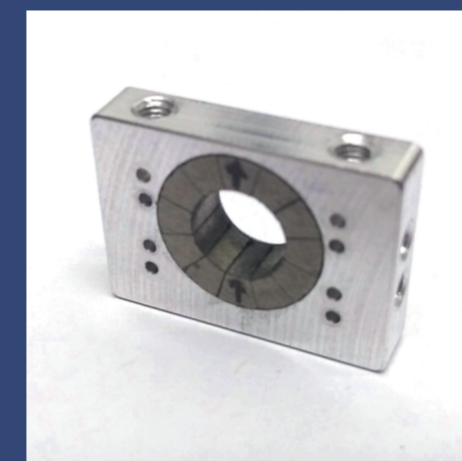
Stabilisation of intermediate collisional complexes at ultra-low temperatures.

[N.-B. Nu. Phys. Scr. B4 (2011), p. 028104]

Magnetic guide

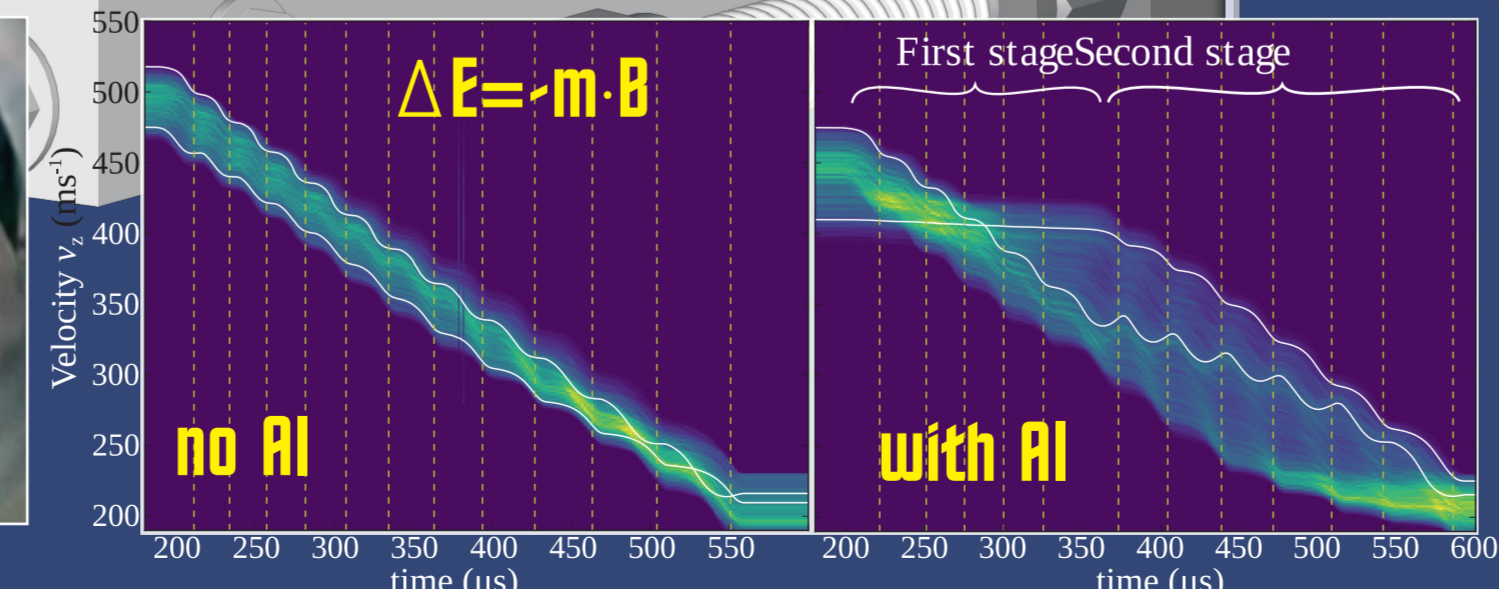
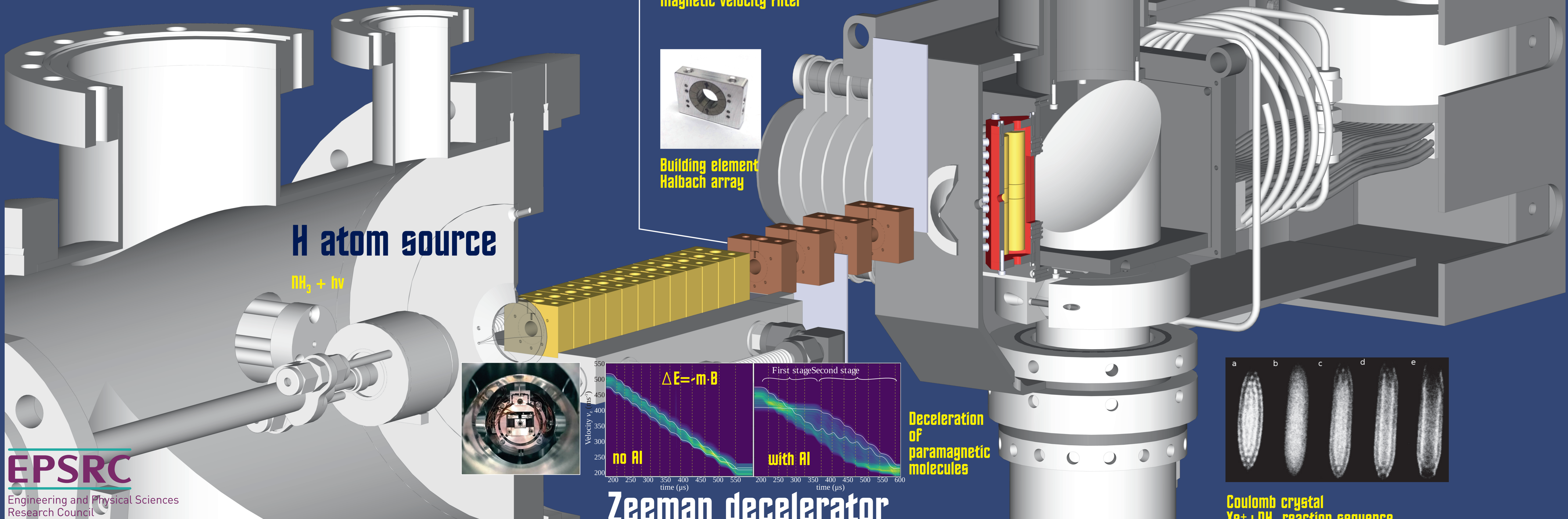
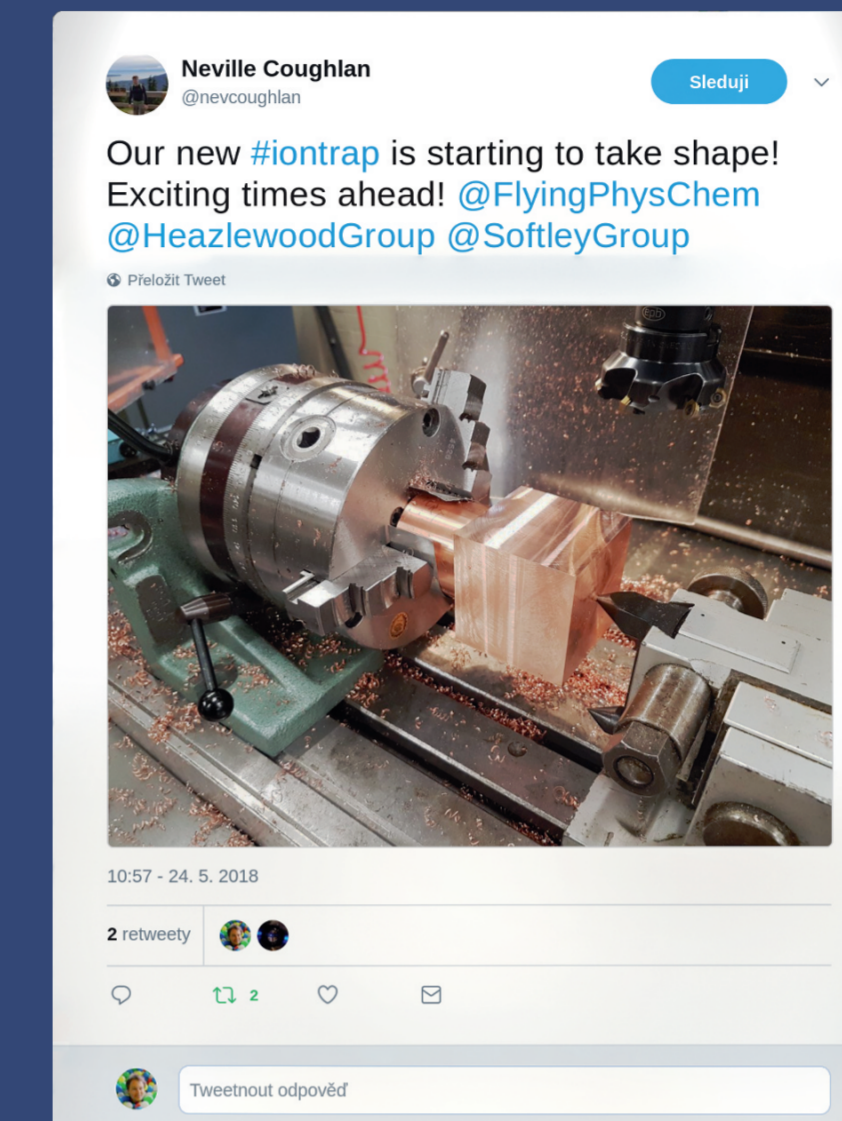


Magnetic velocity Filter

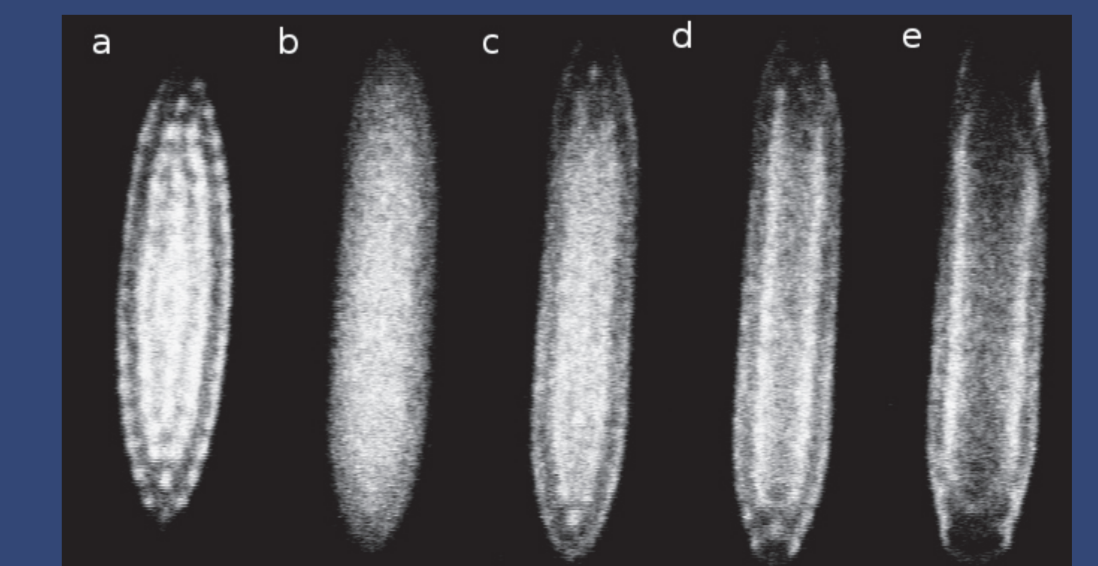


Building element Halbach array

Cryogenic ion trap



Deceleration of paramagnetic molecules



Coulomb crystal $Xe^+ + NH_3$ reaction sequence