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Chronicles of cosmic dawn: high redshift quasars as probes of supermassive black holes and the intergalactic medium

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Propositions

accompanying the thesis

Chronicles of Cosmic Dawn

High redshift quasars as probes of supermassive black holes
and the intergalactic medium

1. Public data releases are a gift to the scientific community, even though the gargantuan effort behind them – data collection, cleaning, and reduction – remains vastly underrated (*Chapter 2*).
2. The consistency of continuum slopes and spectral features in quasar composites across redshifts demonstrates that the physical processes governing their nature remain unchanged through cosmic epochs (*Chapter 2*).
3. Simultaneously fitting the dependence of proximity zone sizes on both quasar luminosity and redshift provides a more robust framework than traditional approaches, yielding more reliable results than any previous analysis (*Chapter 3*).
4. Current IGM models of the Ly α forest at the end of reionization likely miss key physical ingredients – potentially including patchy reionization, residual heating, or UVB fluctuations – that could explain the mismatch with observations (*Chapter 4*).
5. The impact of a scientific discovery depends as much on how it is communicated as on the result itself: captivating figures and concise explanations should always be essential ingredients of any paper.
6. Acronyms are useful only when they aid memory by condensing names into their initials; forcing them by stitching random letters from the middle of words defeats their purpose.
7. Passion draws us into academia, competition drives many out, and arrogance too often decides who stays. Perhaps it is time to rethink what excellence really means.
8. Astrophysics often attracts peculiar personalities – a strength when it fosters creativity, but a challenge when it comes to collaboration and responsibility.
9. The number of Ph.D.s among MCU villains is surely more than coincidence.
10. Being short is a daily challenge – crowds, shelves, mirrors, even peepholes – but the Netherlands turned it into a full-time job.
11. Life is too short for bad food: a meal is never just fuel, but a chance for pleasure, care, and love – wasting it is the only real shame.
12. If we are lucky, we learn that ‘home’ is not a single place: we can belong to many at once, and always miss the ones left behind.

Silvia Onorato
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