EBL / ALP / IGMF / LIV

Organisation and Goals of a new CTA task force

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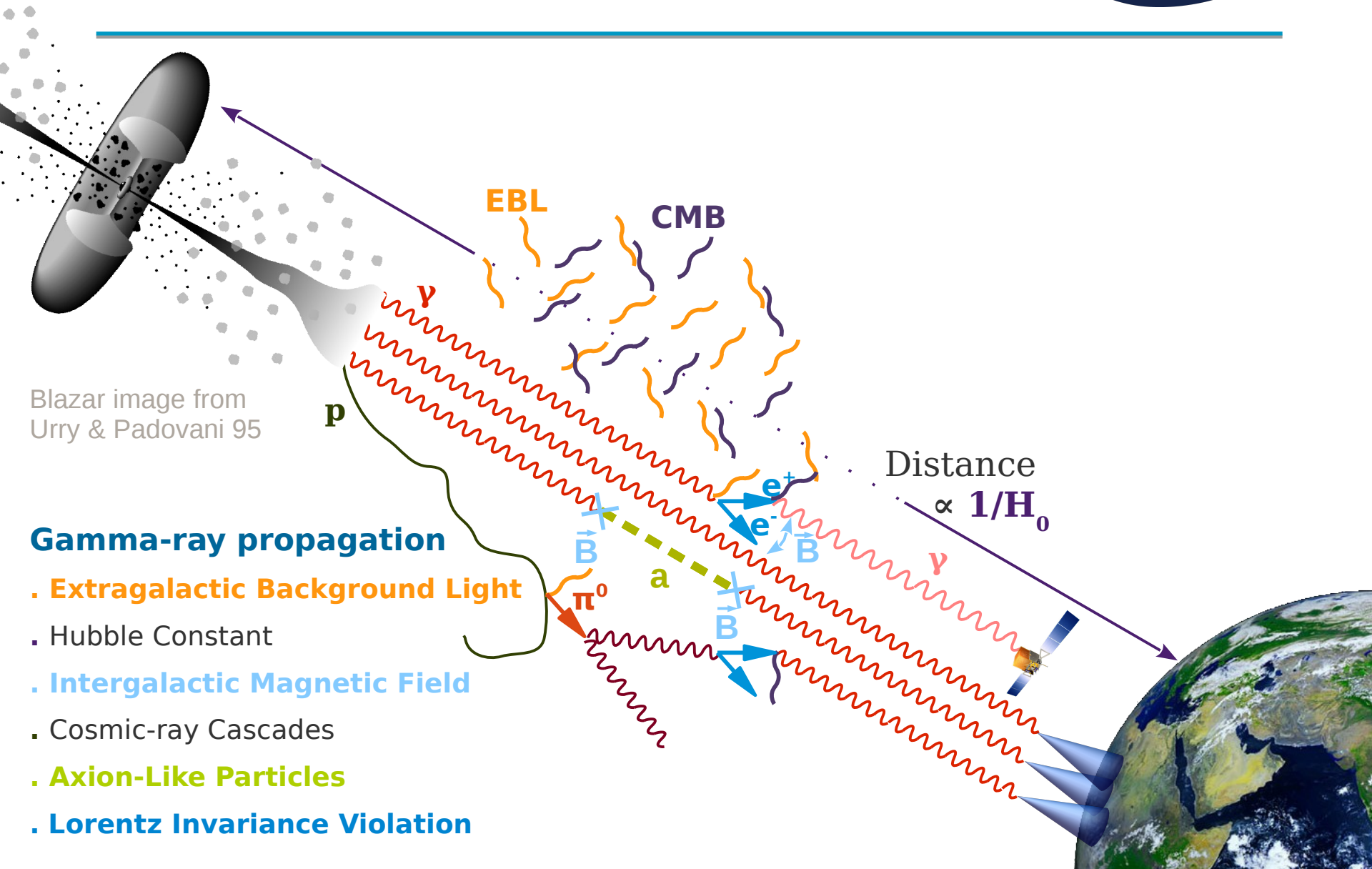
Science Case



Gamma-ray propagation

. **Extragalactic Background Light**

. Hubble Constant

. **Intergalactic Magnetic Field**

. Cosmic-ray Cascades

. **Axion-Like Particles**

. **Lorentz Invariance Violation**

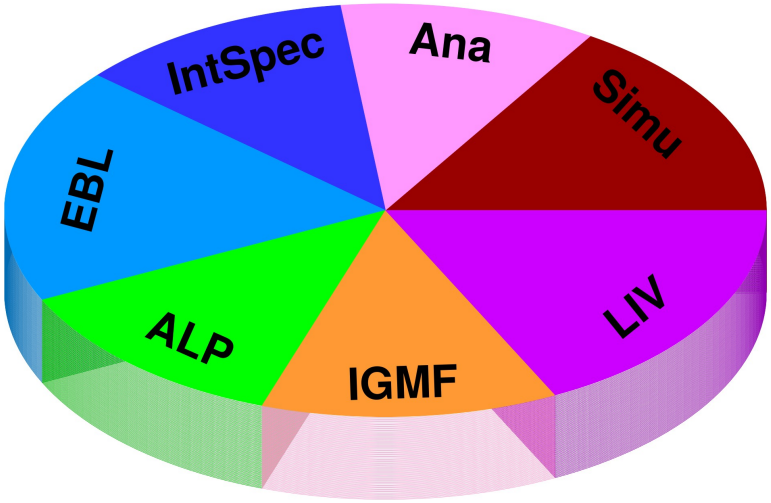
Practical Organization

- Main page of the task force
  - Emailing lists:
    - Cta-phys-gpropa, for general communications
    - Cta-phys-gpropa-simu, -ana, -intspec, -ebl, - alp, -igmf, -liv for smaller-group communications about simulations, analysis, intrinsic spectra, EBL, ALP, IGMF, and LIV, resp.
  - Ongoing and upcoming tasks
  - Please sign up to the emailing lists and main page
- Monthly calls: every 1st Monday of the Month
  - Even months: 10–11am Berlin time (1-2am SF, 5-6pm Tokyo currently)
  - Odd months: 5–6pm Berlin time (8-9am SF, 12-1am Tokyo currently)

Composition

52 people signed up to gpropa:

- Even distribution between sub-tasks
  - Simulations: 19 people
  - Analysis: 13 people
  - Intrinsic spectra: 14 people
  - EBL: 22 people
  - ALP: 15 people
  - IGMF: 15 people
  - LIV: 21 people



- Why sub-tasks?
  - Few time for in-depth discussions during monthlys
  - Small expert groups to tackle the numerics & physics, report during monthlys, and trigger questions to the entire task force

Goals of the task force

Consortium publication: 1-yr timescale

- Discuss CTA capabilities (full array) wrt gamma-ray propa.
  - Source list & activity from EGAL KSP #8
    - Expected AGN Population based on Fermi catalogs
    - Expected number of flares based on long-term light curves
  - Expected constraints on our 4 main science cases
    - Mostly based on spectral reco (to be discussed for IGMF)
    - Interplay between these science cases

Threshold vs Full-Array

- Gain with full CTA funding in terms of gpropa science?

Early science: 2018-19

- Develop versatile tools that can be used with real data