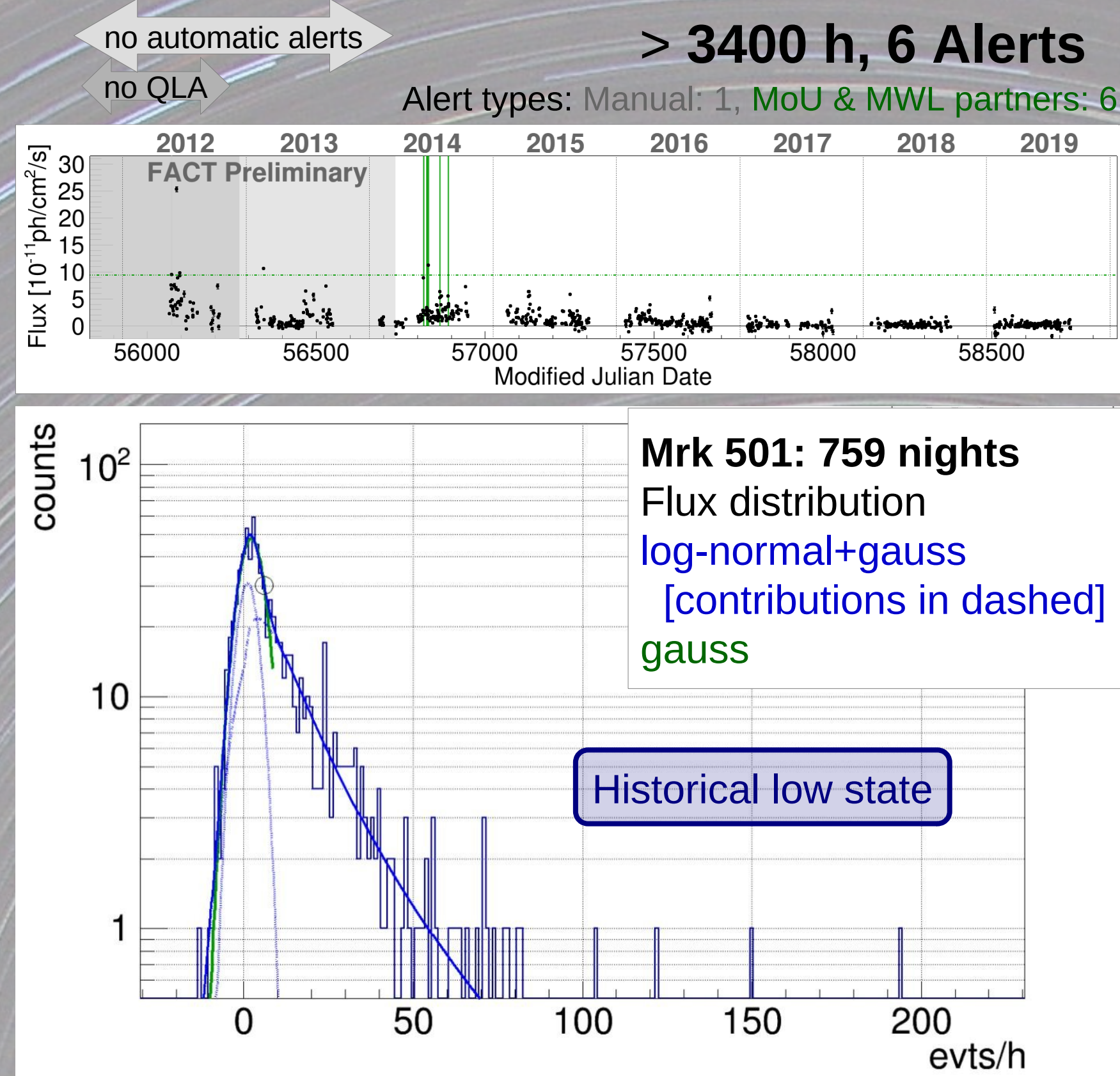


Mrk 501

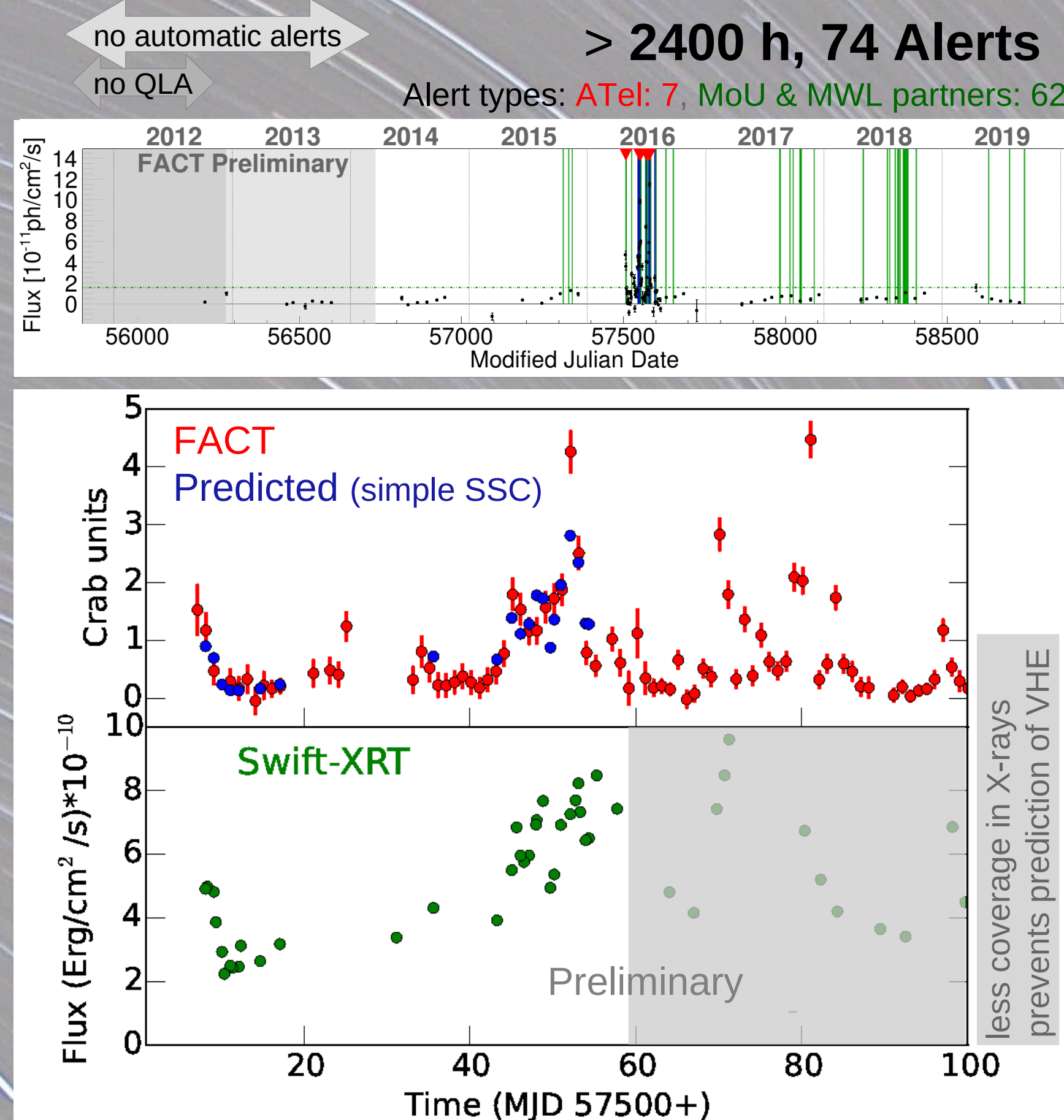


Dorner et al. (FACT Collab), Galaxies 2019, 7(2), 57

More on Mrk 501:

Ahnen et al. (MAGIC, FACT, VERITAS, MWL) A&A 620 (2018) A181
 Arbet-Engels et al. (FACT Collab), A&A, 655 (2021) A93
 Sliusar et al., (FACT Collab), PoS(ICRC2021) 808
 Acciari et al. (MAGIC, FACT, MWL) A&A 637, A86 (2020)
 Romoli et al. (FACT, H.E.S.S.), Galaxies 2018, 6(4), 435
 Cologna et al. (FACT, H.E.S.S.), AIPC, 1792, 1 (2016)

1ES 1959+650

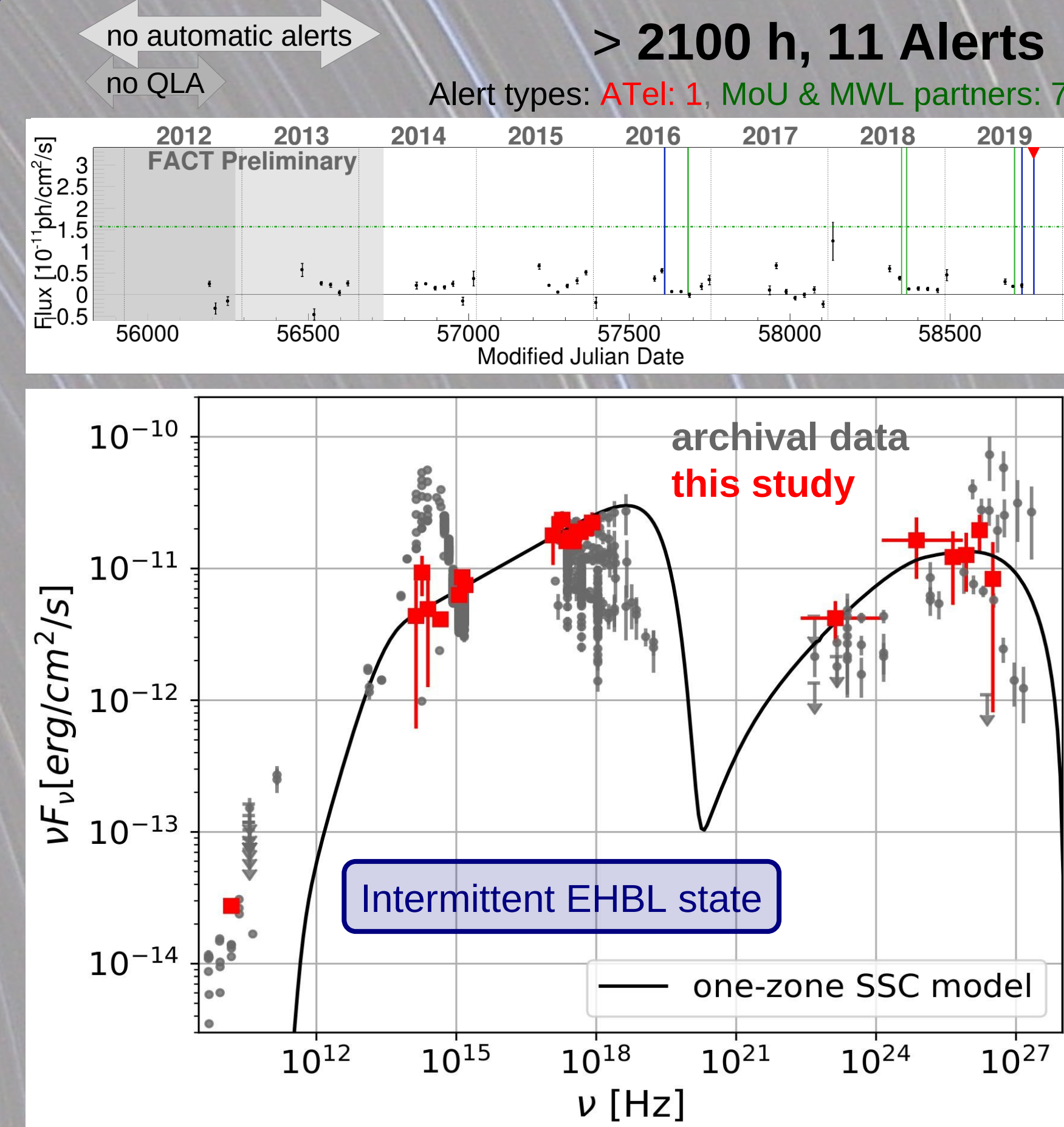


Dorner et al. (FACT Collab), PoS(ICRC2017) 608

More on 1ES 1959+650:

Kintscher (IceCube, FACT, MAGIC), PoS(ICRC2017) 969
 S. Sakurai et al. (FACT, MAGIC), PoS(ICRC2021) 858
 ATels: #9010, #9139, #9148, #9203, #9239

1ES 2344+51.4

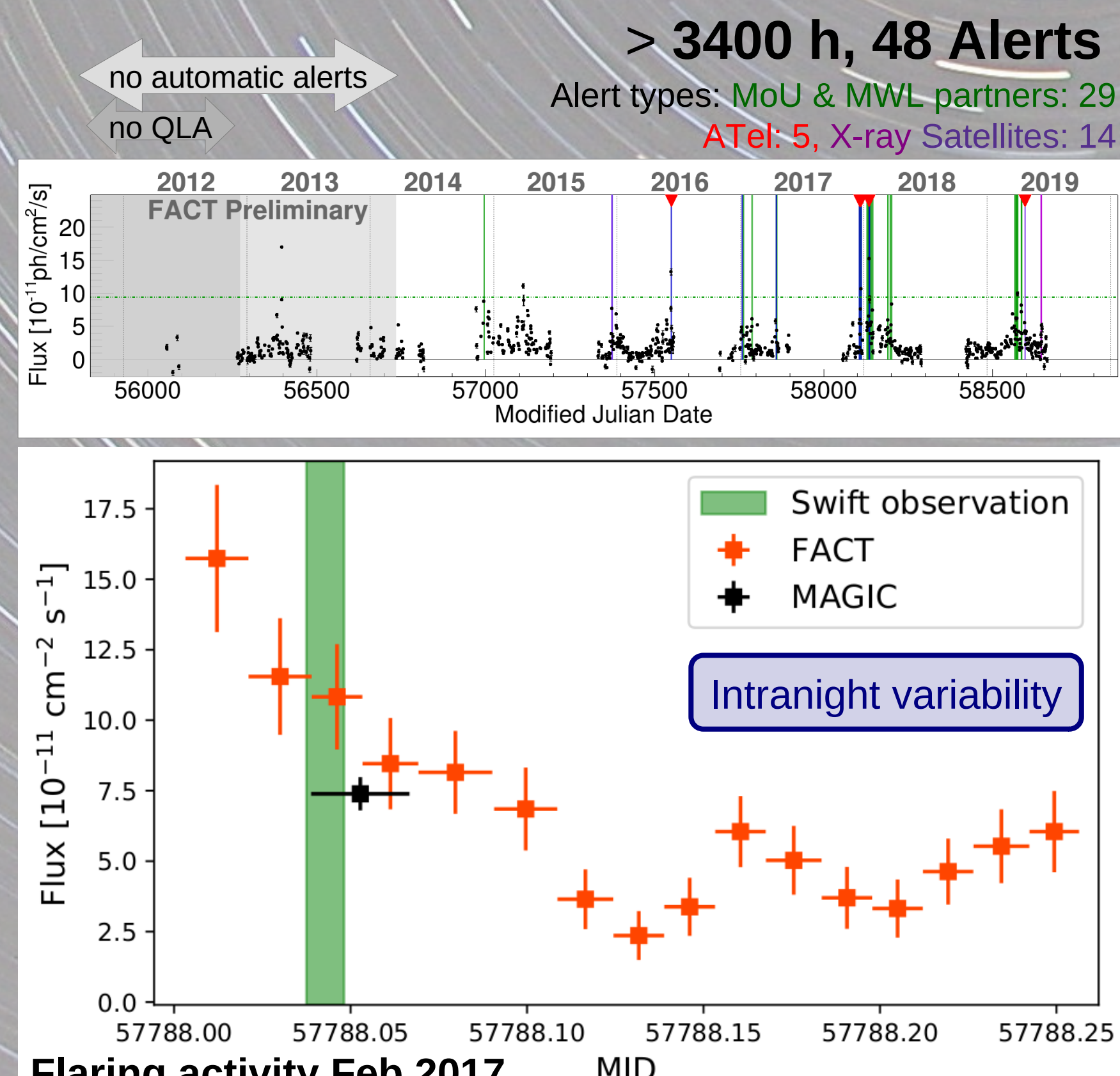


Acciari et al. (FACT, MAGIC), MNRAS 498, 3 (2020)

More on 1ES 2344+51.4:

Arbet-Engels et al., (FACT, MAGIC), PoS(ICRC2019) 620
 ATel #13165

Mrk 421

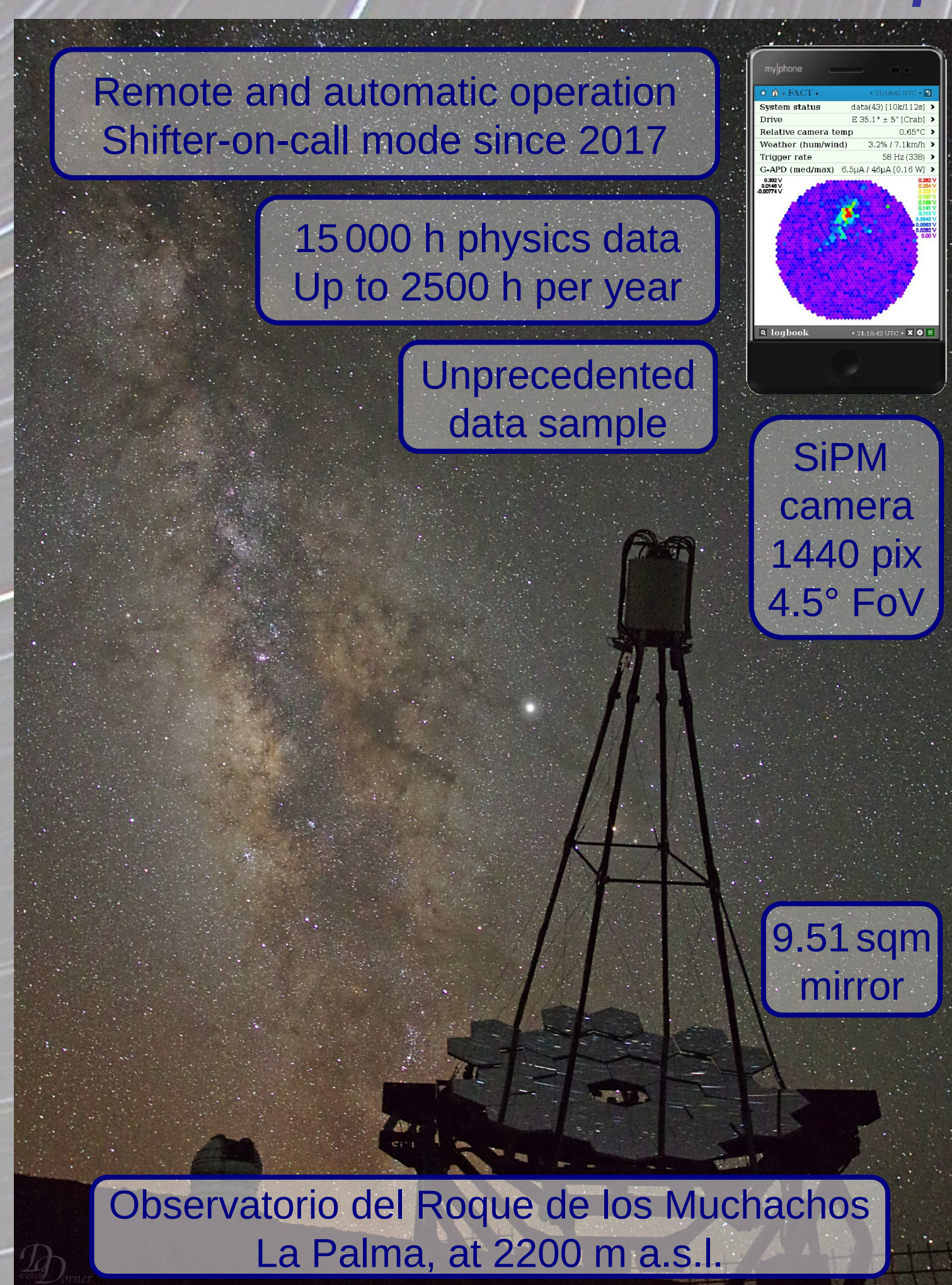


Acciari et al. (MAGIC, FACT), A&A, 655 (2021) A89

More on Mrk 421:

Markowitz et al. (FACT, MWL), MNRAS 513.2 (2022) 1662–1679
 Arbet-Engels et al. (FACT Collab), A&A, 647 (2021) A88
 Gokus et al. (MWL, FACT), MNRAS, 529 (2024) 1450
 Gokus et al. (FACT, MWL), PoS(ICRC2021) 869
 Kreikenbohm et al. (FACT, MWL), XRU (2017)
 ATels: #9137, #11077, #11086, #11184, #12680

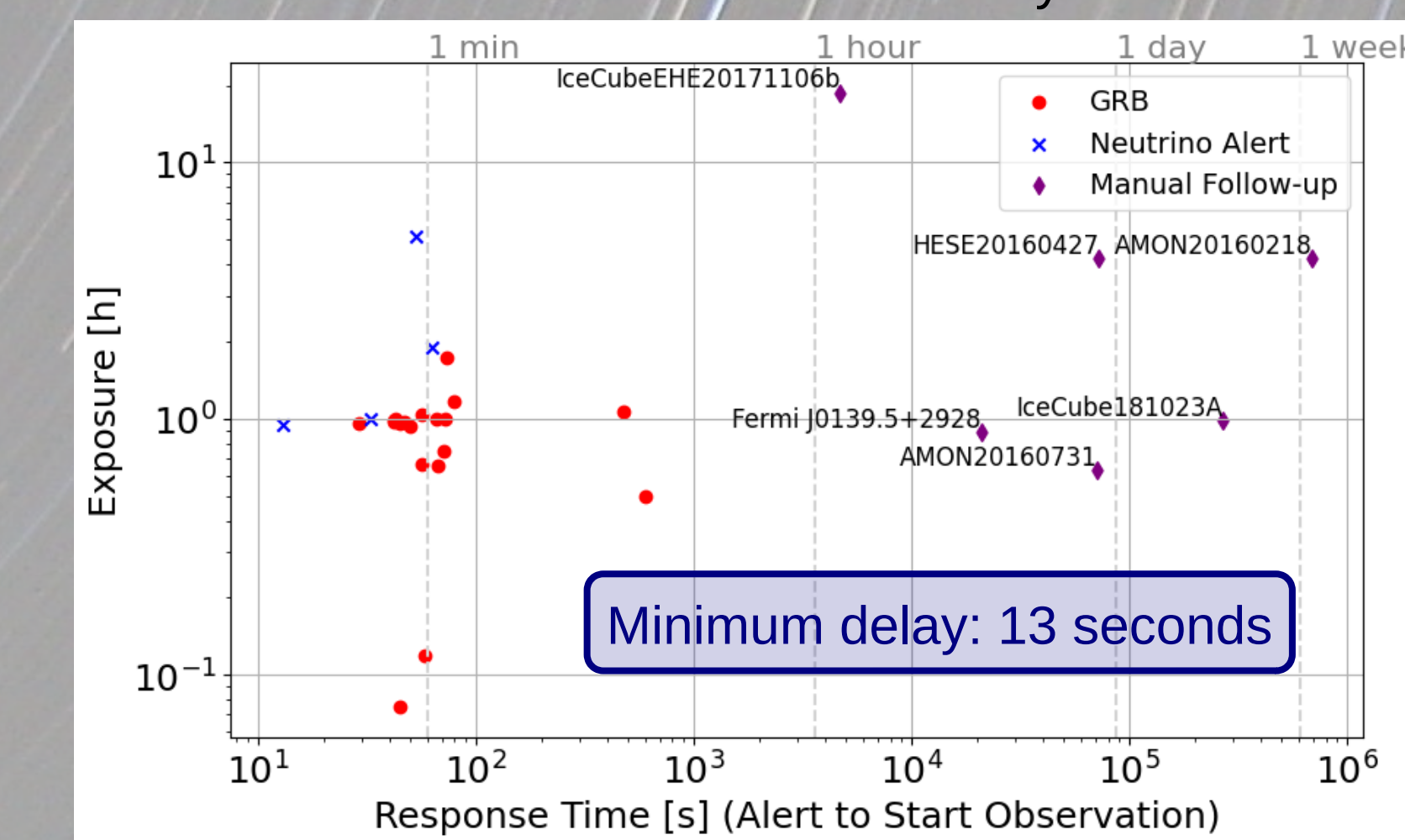
FACT First G-APD Cherenkov Telescope



Anderhub et al. (FACT Collab), JINST 8 (2013) P06008
 Biland et al. (FACT Collab), JINST 9 (2014) P10012

Unbiased Monitoring & Follow-Up

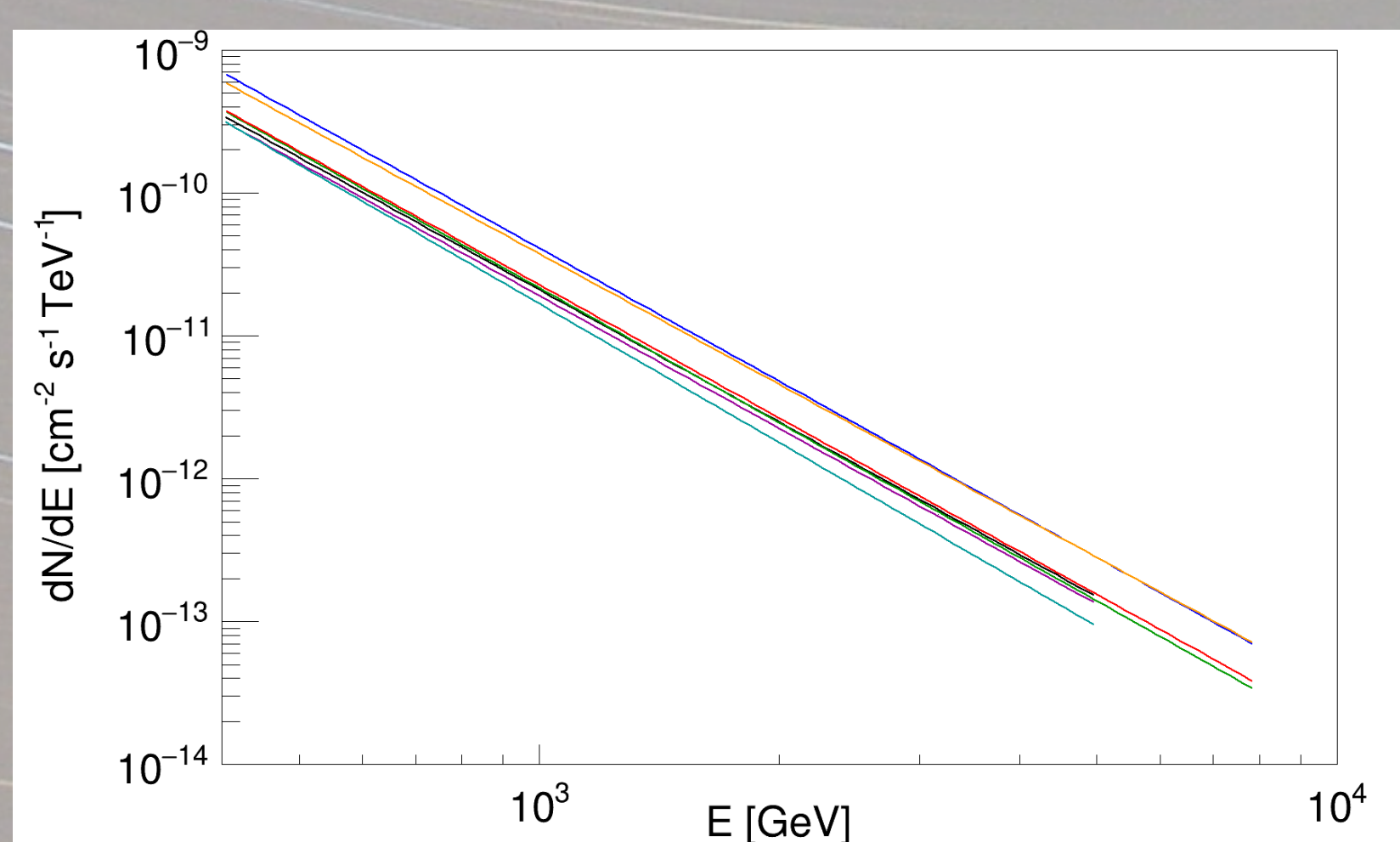
Strategy: Observe small sample of bright TeV blazars as much as possible + target of opportunity observations
SIPMs – Ideal for Monitoring:
 → Robust, stable, excellent performance
 → Observations during strong moonlight
 Remote, automatic operation → High data taking efficiency
 → **Maximized duty cycle, minimized gaps**
Target of opportunity observations: Follow-up observations of AGN flares, neutrino alerts, GRBs, gamma-ray hot spots
 Automatic follow up since May 2019, fast repositioning
Sending alerts:
Low-latency quick-look analysis: public results in ~20 min
 → More than 100 alerts to the community



More on ToOs: Dorner et al. (FACT Collab), PoS(ICRC2021) 851
 Satalecka et al. (multi Collab*), PoS(ICRC2021) 960
 Schüssler et al. (multi Collab*), PoS(ICRC2023) 1501
 * FACT, Fermi, H.E.S.S., IceCube, MAGIC

Unbiased Long-Term Study

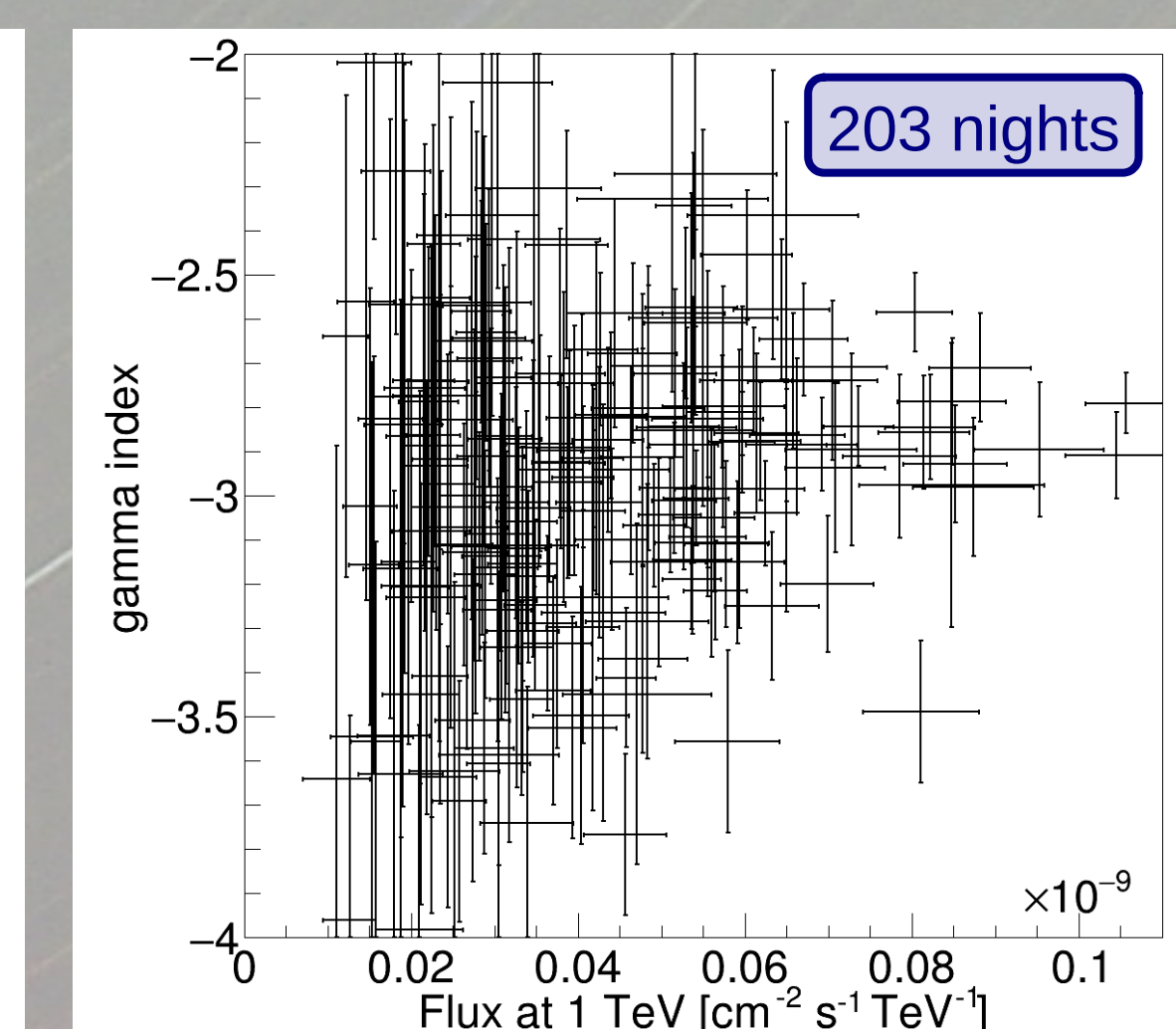
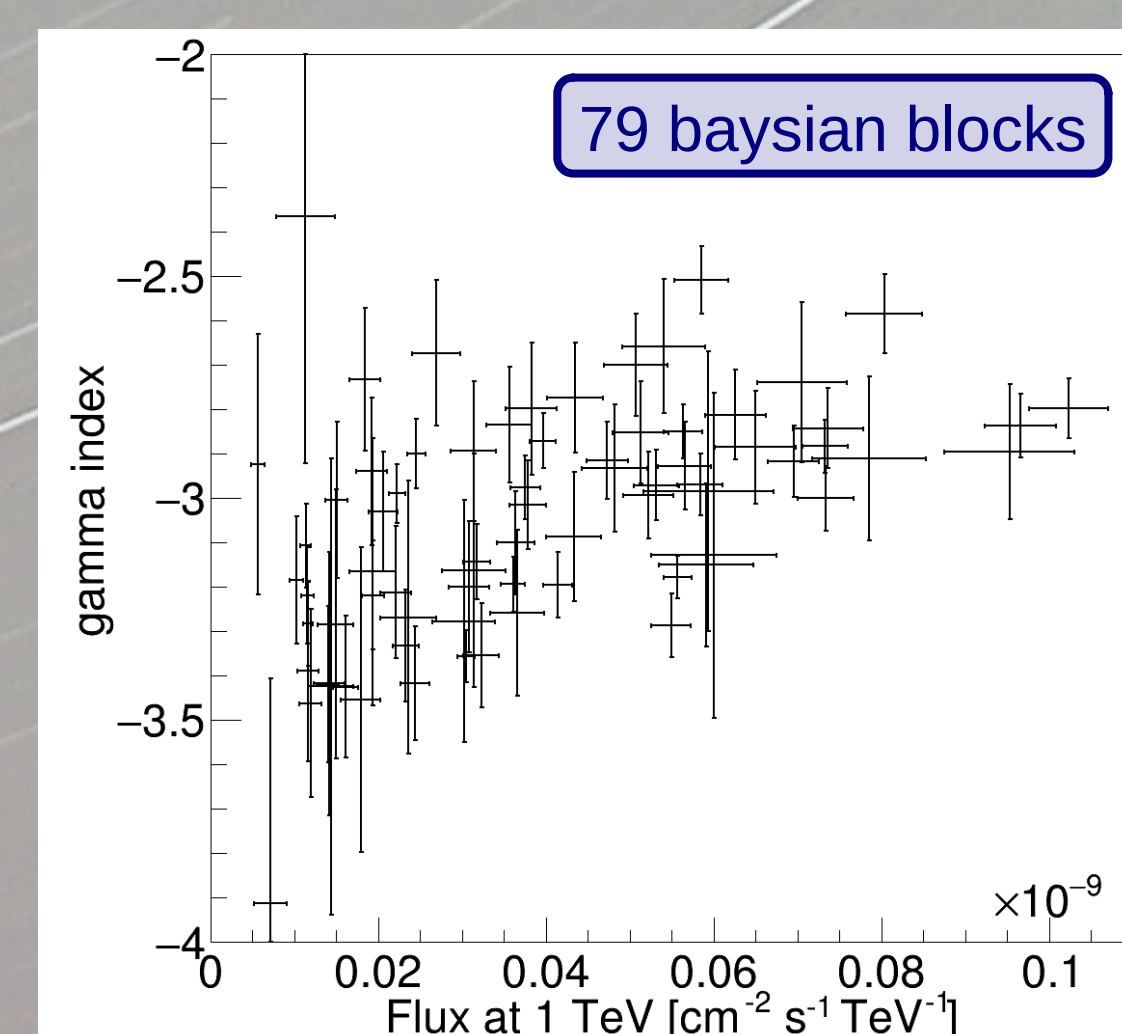
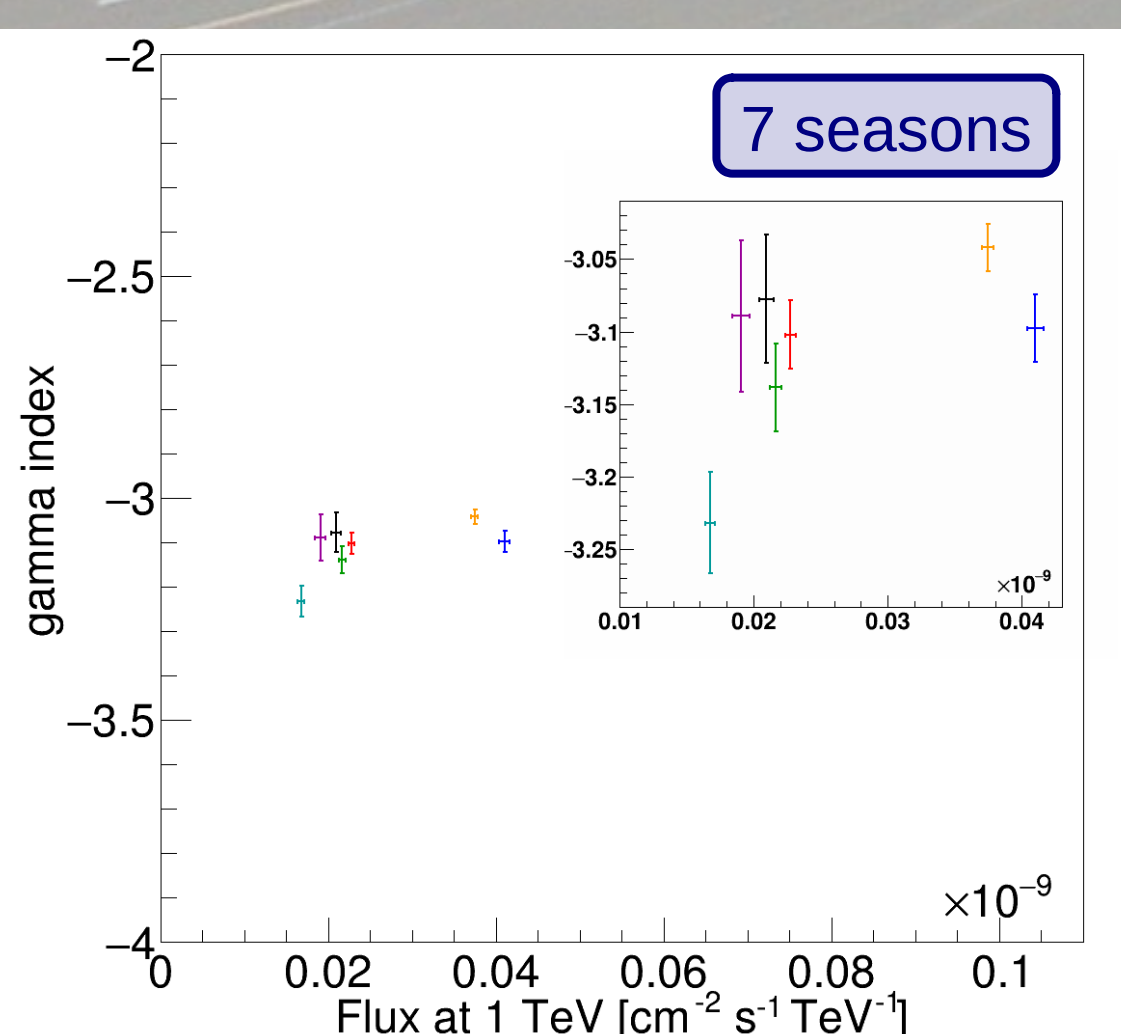
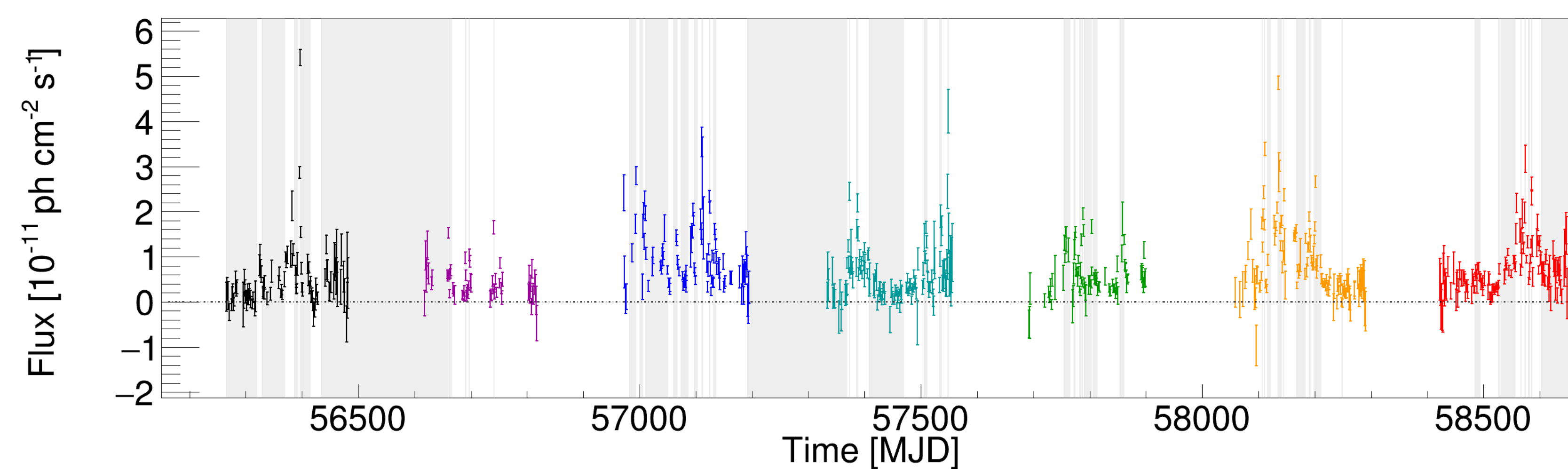
Mrk 421: > 3400 h, 1128 nights, 7 seasons
 Bayesian Block analysis → 101 blocks
 Spectral analysis (zd < 30°, dark night and low moon)



2012/13
 2013/14
 2014/15
 2015/16
 2016/17
 2017/18
 2018/19

More on unbiased studies:

Arbet-Engels et al. (FACT Collab), A&A, 655 (2021) A93
 Arbet-Engels et al. (FACT Collab), A&A, 647 (2021) A88
 Schleicher et al. (FACT Collab), Galaxies 2019, 7(2), 62
 Dorner et al. (FACT Collab), Galaxies 2019, 7(2), 57
 Wagner et al. (FACT Collab), PoS(ICRC2021) 868
 Dorner et al. (FACT, HAWC), AIPC, 1792, 1 (2016)
 Lauer et al. (FACT, HAWC), PoS(ICRC2017) 625
 Iotov et al. (FACT Collab), PoS(ICRC2021) 879



D. Dorner¹, B. Schleicher², J. Abhir², M. Balbo³, A. Biland², K. Brand¹, T. Bretz², D. Elsaesser⁴, P. Günther¹, S. Hasan², D. Hildebrand², K. Mannheim¹, M. Linhoff⁴, A. Paravac¹, F. Pfeifle¹, W. Rhode⁴, V. Sliusar³, M. Vorbrugg¹, R. Walter³

Acknowledgements: The important contributions from ETH Zurich grants ETH-10.08-2 and ETH-27.12-1 as well as the funding by the Swiss SNF and the German BMBF (Verbundforschung Astro- und Astroteilchenphysik) and HAP (Helmholtz Alliance for Astroparticle Physics) are gratefully acknowledged. Part of this work is supported by Deutsche Forschungsgemeinschaft (DFG) within the Collaborative Research Center SFB 876 "Providing Information by Resource-Constrained Analysis", project C3. We are thankful for the very valuable contributions from E. Lorenz, D. Renker and G. Viertel during the early phase of the project. We thank the Instituto de Astrofísica de Canarias for allowing us to operate the telescope at the Observatorio del Roque de los Muchachos in La Palma, the Max-Planck-Institut für Physik for providing us with the mount of the former HEGRA CT3 telescope, and the MAGIC collaboration for their support.

