

Swift Publication Statistics and the Comparison with Other Major Observatories

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Summary

Swift is a satellite aiming at detecting gamma-ray bursts (GRB), the most energetic stellar explosions. Launched at the end of 2004 and funded until 2016, it is equipped with γ -ray, X-ray, and optical-UV instrumentation and discovers, localizes and collects data for more than hundred GRBs per year. We studied the bibliometrics produced with *Swift* data and found that it is one of the most successful medium-size missions ever. The production in 2005 was 24 papers, and has steadily increased to 328 in the year 2013, surpassing *Keck*. If this trend continues, *Swift* may soon be approaching the publication numbers of *XMM-Newton* and *Chandra*. Also the number of citations shows a great success for *Swift*. The *Swift* users community publishes mostly in *ApJ/S* (almost 50% of the papers) as well as *A&A* and *MNRAS* (approx. a quarter each). In the years 2005–2013, 47 papers (2.7%) were published in the high-impact journals *Nature* and *Science*.

Methodology

For all telescopes, but *XMM* and *Chandra*, papers are selected consistently. The system used by us is FUSE (Full-Text Search tool), developed and maintained by the ESO Library. It identifies papers that mention *Swift*. These are then carefully inspected to make sure that *Swift* data were used.

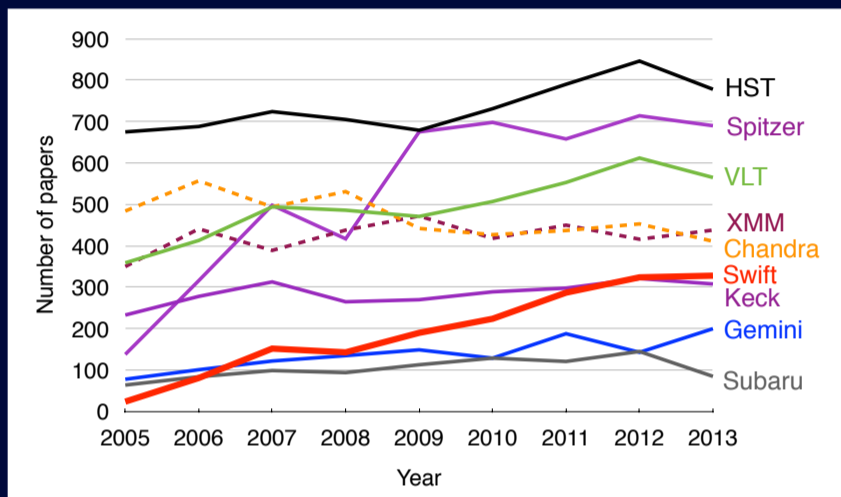


Fig. 1: Total number of refereed papers 2005–2013 for *Swift* and other observatories. The methods used for *Chandra* and *XMM* (dashed lines) are different from the others. In the comparison, strictly speaking their numbers should be considered as upper limits.

Productivity: Number of Publications

The first *Swift* data papers were published in 2005, only a few months after the launch. With a continuous increase, *Swift* produced 328 papers in 2013, 50% more than *Gemini* and three times as many as *Subaru*, and surpassed *Keck* (Fig. 1 and 2).

Impact: Number of Citations

We obtained citations of *HST*, *VLT*, *Gemini*, *Subaru*, and *Keck* data papers for publication years 2005–2013. Fig. 3 shows that *Swift* papers on average are cited as often or more frequently than papers from other major observatories (Fig. 3).

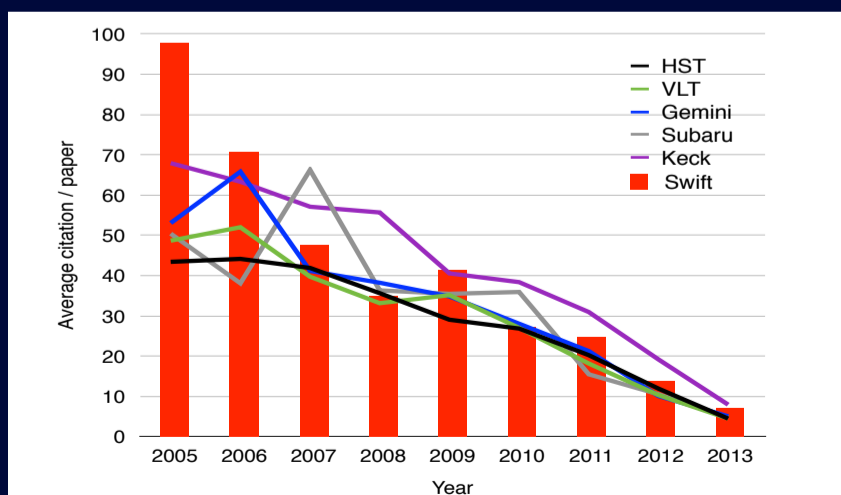


Fig. 3: Citations/paper of *Swift*, *HST*, *VLT*, *Gemini*, *Subaru* and *Keck* papers published 2005–2013

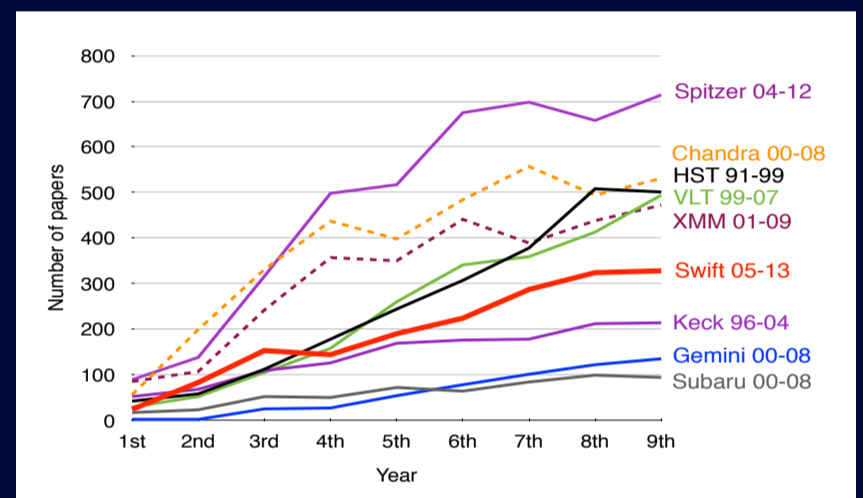


Fig. 2: Number of refereed papers for the first 9 years of publication. Years indicated next to the facilities. Symbols as in Fig. 1.

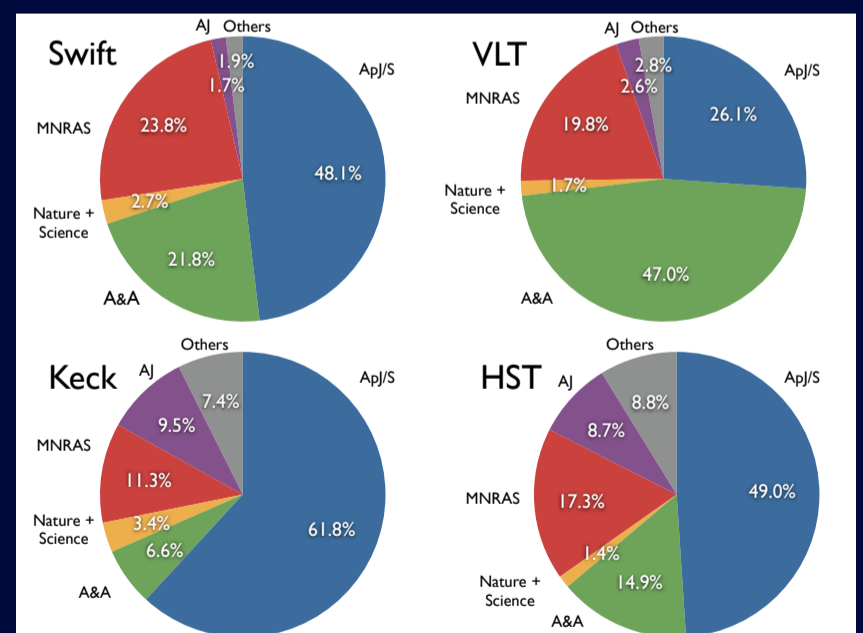


Fig. 4: Journal distribution of *Swift*, *VLT*, *Keck* and *HST* papers 2005–2013.

Swift Journal Distribution

The journal distribution of *Swift*, *VLT*, *Keck* and *HST* papers 2005–13 are all distinct. With regard to *ApJ/S* and *A&A*, the behavior of the *Swift* community is similar to that of *HST* users. The fraction of papers in the high-impact journals *Nature* and *Science* is 2.7% for *Swift*, 3.4% for *Keck* and below 2% for *VLT* and *HST* for these years (Fig. 4).