



The Sun Today

31 January 2019

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Paperback

ISBN 978-3-030-04078-9

Language: English

*The choir of kindred spheres competing
The Sun intones its ancient sound
And runs its thunderous course
Completing its preordained diurnal round.
This vision non is comprehended
To angels quicken at the sight.
These high and wondrous works are splendid
As when the world first shone with light.
(J.W. Goethe, Faust I, Prologue)*

In December 1974, I became aware of the significant influence of the Sun on my life.

The 10th of December, 1974 was the starting day of the first Helios solar probe (HE-A) with the objective to explore the near-solar environment and the interactions of the Sun with the Earth. It was my privilege as a young engineer to be responsible for the operation of the probe. We had our hands full with the two Helios probes, HE-B was launched a year later, to let the two probes survive in the hostile environment of the Sun. With respect to the scientific experiments, we were interested only in the operating data and - as top priority, in providing the scientists with the most complete set of measurements.

From this perspective, it is invaluable that a group of scientists under Claudio Vita-Finzi's authorship, after nearly 45 years have taken the trouble to summarize today's (late 2018) state of solar research in an understandable way in order to let the "taxpayer" know what has happened with the sums invested in solar research.

According to the author Claudio Vita-Finzi, this happens in a way "... to think of this book as more like a TV interview, where some reminiscence is expected but the central character remains in view."

Coming back to the Helios probes, which until last year held the record for the "closest approach" to the Sun (0.301 and 0.29 AU), the Helios' experiment-list [1] reads almost like the table of contents of "The Sun Today".

The significance of these early measurements is also pointed out in the book in several places, so for example the simultaneous evaluation of the Helios and Voyager-1 & 2 measurements enabled a large-scale charting of the heliosphere and allowed the correlation of propagation phenomena.

Of course, many other international satellite projects for solar observation have been started and experiments carried out since then - all described in chronological order in the individual chapters of the book: "Solar Furnace", "Solar Magnetism", "Sun and Weather" together with the latest state of research results augmented and illustrated with excellent original photographs delivered by the satellites and probes, relevant images and graphics. The introductory chapter, "A Commonplace Star," does away with the centuries-old uniqueness and centered view of our Earth and its sun, and awakens

through the impressive photo-image of the "Milky Way" - Galaxy, as supplied by the COBE satellite - and the accompanying artist's impression of the location of the Sun in the Milky Way system our awe and humility.

Imposing is also the description of the now available refined and partly ingenious new measuring methods, and as a spin off, the search for exoplanets can be based on the standards of our solar system.

Overall, the book is brimming with scientific knowledge and captivates by summarizing the latest Sun-research results in an understandable way. Each chapter has a detailed list of source references and points to more detailed scientific information.

Every attentive reader will be convinced of the seriousness and success of solar research activities and, above all, will be given a lasting impression of why solar research is conducted, why solar research is so laborious and why exploration of the sun is so important to the survival of homo sapiens on Earth.

A clear table of contents, the index at the end and a list of abbreviations make orientation easy and goal-oriented.

The book is a stroke of luck for passionate space researchers and sky watchers. Interested lay people will also get their money's worth - and even space critics (why does space research cost so much?) will be convinced of the sincerity of space research by the presented impressive and far-reaching scientific findings.

Reference



[1] Helios („Ten Years of Helios“), Publisher Herbert Porsche, DFVLR Oberpfaffenhofen, ISBN 3-88135-156-6

March, 2019, Joachim J. Kehr, Editor SpaceOps News for the Journal of Space Operations & Communicator
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