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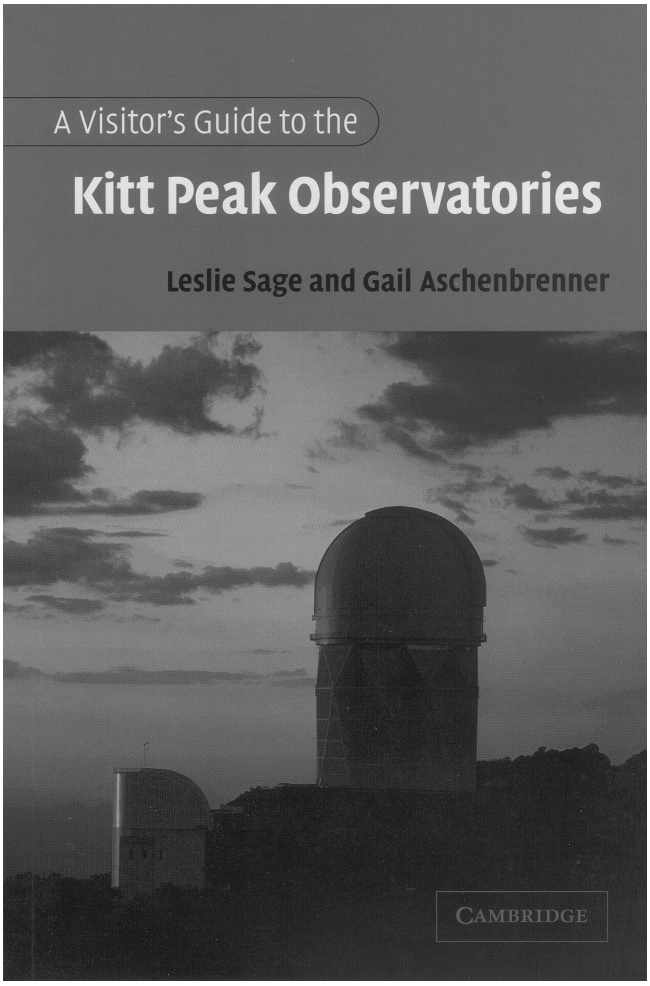
Book Review

A visitor's guide to the Kitt Peak observatories, by Leslie Sage and Gail Aschenbrenner. Cambridge University Press, 2004, 118 pp., $14.99, paperback. (ISBN 0-521-00652-X)



Kitt Peak, Arizona is the most visited astronomical site in the world. Yet, how many visitors leave knowing the full story of the place, which ranges from leading astronomical research to pink flamingos?

A visitor's guide to the Kitt Peak observatories gives a comprehensive look at "Telescope National Forest" and its setting on a "sky island" in the Sonoran Desert.

To my knowledge, this is the first attempt to place the research site in its environmental context, which is an important part of the Kitt Peak experience for any visitor. Co-author Gail Aschenbrenner of the USDA Forest Service in Tucson, Arizona uses her background to describe the far-reaching views in all directions, the nearby and distant mountain ranges, and the plant and animal life. Since many visitors to Kitt Peak are not local, this information can greatly enrich a visit.

You may have noticed that the book is a guide to the Kitt Peak observatories rather than a guide to Kitt Peak National Observatory. This is because the Kitt Peak National Observatory directly operates only a few of the 20 or so telescopes on the mountain. The other observatories include the National Solar Observatory, the National Radio Astronomy Observatory, the University of Arizona's Steward Observatory and Lunar & Planetary Laboratory, and a host of consortia too long to list here but which are found in the guide. Each telescope and its contribution to science are described in detail.

Be warned, however, this is a field guide and can be dense. Chapter 2, which describes the walking tours of the entire site, probably should not be read in one sitting. The information, which is linked to vistas/interest points (VIPS), is best absorbed at the particular location, when you are looking at the given vista or telescope. For some, the first paragraph or so of a section will be sufficient, while the astrobuff may want to read it all.

Chapter 1 gives good advice on planning your trip to Kitt Peak. It takes a false step, however, by telling you to turn east on SR 386 to begin the climb up Kitt Peak. In fact, the turn is to the south, but as this is the only way to turn and after seeing the telescopes in the distance for the past half-hour, you will not lose your way.

By far, the largest part of the book is chapter 2, "Telescopes and vistas/interest points." The descriptive text is tied to labeled locations on color-coded walking tours. For example, VIP-3 is the visitor's center and TEL-1 is the McMath-Pierce solar telescope, etc. The only problem with this system is that the map showing the color-coded details is only half-a-page in size. The labels are quite small and take some effort to read. Perhaps, the map could be expanded to a full page in future editions. Since it is the only map of the layout of the mountain in the book, visitors trying to plan a route will find the map challenging.

I called the Kitt Peak visitor's center to find out whether larger versions of this map were available. Indeed, they are, although not color-coded in the same way. Be sure to pick up a larger map upon arrival.

For the literal-minded among us, be aware that the VIPs are virtual points. You will not find a post with a plaque

reading VIP-4 on the mountain. I spent some time looking for VIPs 1 and 2 on the small map before re-reading previous text and finding out that they were at the bottom of the mountain. A call to Kitt Peak confirmed that there are no turnouts corresponding to these points along the road, so drive on up.

Once underway, let's say on the "south route," you might stop at TEL-6, the KPNO 2.1-m telescope. The guide will provide great detail on the design of the telescope, its research specialties (infrared), and examples of discoveries (first gravitational lens). Here, as throughout the book, terms defined in the glossary are printed in purple.

One of the many things I learned from co-author Leslie Sage's careful descriptions of the science on the mountain is the history of the separate 0.9-m feed for the spectrograph adjacent to the 2.1-m telescope. The picture on page 31 is my first look ever at this primary mirror. The guide also contains the most information I have ever seen on the enigmatic 1.2-m Calypso telescope.

While you are making your way along the routes and reading passages from the guide, you will notice that the text is interspersed with insets that feature the natural history and other highlights of your surroundings apart from telescopes. You may read about geology, plants, or ringtail cat footprints in the section on the 3.5-m WIYN telescope mirror.

The science contributions are included as well. As KPNO Director Richard Green writes in the Forward, "Astronomers have used Kitt Peak telescopes to find indisputable evidence for dark matter stabilizing the rotation of galaxy disks. They devised innovative techniques to measure the rate of expansion of the Universe . . . And they tracked the light output of distant supernovae to infer the reacceleration of the Universe from the pressure of dark energy."

An unexpected find was chapter 3, which is a first-rate description of the process of astronomy—how astronomers use telescopes. This is something to be read anytime and anywhere. It answers many of the questions that the general public has about what astronomers do. While Sage stirs excitement about astronomy, he responsibly gives some straight if sobering talk on the challenge of careers in astronomy.

Overall, some passages may be tough for lay readers in spite of the glossary, and that does not apply only to the astronomy. I like the geologic information included throughout, but, "Metamorphosism and intrusion of the Pan Tak granite were related aspects of a localized, intense, late Cretaceous and early Tertiary orogenic episode . . . ," while undoubtedly accurate, may be a challenge for the general public.

The book suffers from some first-printing typographic errors and an upside-down photo. (You'll have to look yourself to find it.) In addition, TEL-17, the Hungarian automated telescope, moved to the Whipple observatory in November 2002.

The Appendix, "Common names of flora and fauna," seems marooned at the back of the book. While I might use it to check off species seen on Kitt Peak, visitors unfamiliar with Sonoran Desert lifeforms could not. It does serve the stated purpose of giving readers an idea of the diversity of life in the region, however. Perhaps, these pages could be turned to giving information on the plants identified by metal markers (p. 26) and a few likely-to-be-seen animals.

I do recommend the book for any visitor to Kitt Peak, especially those with some astronomy background. The blending of natural history and science in this guide well-reflects the ambience of the observatories. As for pink flamingos, well, the editor says I'm out of space, so either read or visit to find them, preferably both. They are there, I promise.

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