have happened on last April's almost disastrous Apollo-13 flight if a scientist-astronaut had been a member of the three-man crew. Would that crew have managed to bring the wounded craft home? Might another scientist be happy to suffer the "astronaut interruption" of his career for the chance of being the first scientist on the moon, or on Mars? Is jet flying really unduly risky?

JOHN WHITE
Cambridge, Massachusetts

EARLY SOLAR PHYSICS

IF IT IS TRUE, "Who knows only his own generation remains always a child," then most of us in astronomy are children. How little we know of our heritage! How many in solar physics are acquainted with work done on the sun before the present century, other than having heard of Carrington's white-light flare, or Young's green line, or the scramble to observe prominences with the spectroscope in 1868?

The interest is there, surely, for all of us, but the time generally is not, and in a fast-developing field it seldom seems necessary or justified to know much of the really early roots of our research. They lie for the most part buried deep beneath the bulk of published material of the last few decades, in sources not easily found and in languages not always our own. In general texts, where most of us have learned what little astronomy history we know, one suspects that historical comments are derived more often than not from those in earlier texts, rather than from original references. It is hard to learn history from hearsay.

Over the years SKY AND TELESCOPE has published occasional articles of historical interest, and this year a new and promising Journal for the History of Astronomy began publication. In 1929 (with Helen Howarth) and again in 1960, Harlow Shapley assembled two Source Books in Astronomy to make available original classic references. The first volume covered four centuries, the second the period 1900-50. A new, broader effort in the same direction has now been started by Pergamon Press in a series entitled Selected Readings in Physics, with Early Solar Physics as the first volume. It is a good start, and we can hope that others in the set will be devoted to other specific fields in astronomy and will be done as well.

It is not a large book, and the author has arbitrarily and wisely restricted the subject: in emphasis to solar activity and spectroscopy, and in time to the second half of the 19th century. Few could argue with the subject restriction, for these were and are the key areas in solar physics. No

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his passages even for the time were so burdened with detail that their important points were obscured. And was he really an incisive researcher in the sense of some of his contemporaries? One feels, in reading his papers or his diffuse book Solar Physics (1873), that his method was to observe and record everything in the hope that someone else would sort out the important parts.

Readers of Early Solar Physics may wish that instead of so much emphasis on Lockyer, the author had substituted something by Angelo Secchi or Warren de la Rue, both of whom are missing from Part 2, or that more space could have been given to other listed authors. My personal favorite is Charles A. Young, who at two eclipses one year apart discovered the green coronal line and the flash spectrum, who assiduously studied the spectrum of the chromosphere outside of eclipse in the 1870's, and who wrote definitive texts on the sun and general astronomy.

Those who do not know Young, or who have met him only indirectly in Astronomy by Russell, Dugan, and Stewart, will come to appreciate his style in the three papers that Dr. Meadows has included. And anyone who has ever taken an experiment to an eclipse will find a friend when he reads on page 133 Young's feelings after making his famous green-line discovery at the 2 minute, 46-second eclipse in Burlington, Iowa, on August 7, 1869:

"I had just completed the measurement . . . when totality ended . . . I cannot describe the sensation of surprise and chagrin, of wasted opportunity, personal imprudence, and complete exhaustion which overwhelmed me when the sunlight burst out."

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RADIO ASTROPHYSICS

IT IS RARE in such a rapidly developing field as radio astronomy to find a new book that does not promise to go quickly out of date, but A. G. Paczolczyk of Steward Observatory appears to have produced a text that will be useful for many years. He is an able theoretician, sufficiently well versed in observational problems to recognize the need for a work that will cover in one place and in a uniform way the theory behind the various physical processes that are important in radio astronomy. With the aid of this volume, the observational astronomer can educate himself or bring himself up to date on the basic physics of radio sources. Nonthermal processes are emphasized, while the physics of solar