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Present Status of the Public Observatories in Japan

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Abstract

Public astronomical observatories in Japan have been rapidly increasing in recent ten years. We made a questionnaire on their present status to each observatory and get 110 answers from them. Their answers show that (1) number of large telescoples is increasing year by year, (2) many observatories have high-grade detectors, (3) in each observatory, a total number of workers is not only few but also a number of experts on astronomy is very few, (4) the budget for astronomical activities is not so much. (5) recent results of astronomy are not sufficiently informed to almost of them. (6) only few of the observatories have a council, which advises on activities and on management of them. Above results show that the public observatories need an organization, which will make all of observatories active. Moreover, the observatories need advices from professional astronomers in their vicinity, which will useful to improve their environments.

Key words: Public Observatory; Teaching Astronomy

1. Introduction

The public observatories in Japan have been rapidly increasing from the mid-1980s. It is desirable to get out of the education depending on a planetarium and to aim at the education However, working conditions at a public observatory are not so good and workers of astronomy seems to have many troubles.

Once, Okyudo and Ishida(1991) made a preliminary quationnaire to 28 observatories, which had a telescope with 50cm or more aperture. Their results have intrinsic limitation, because they cover only 20% of public observatories in Japan.

Therefore, we present here results of a new quationnaire, which cover almost all of public observatories. In this paper, we selected a public observatory as a observatory which satisfy the following two conditions: (1) It has a installed telescope. (2) It makes observation with public people. The whole replies to each quationnare is published after some arrangement as "A List of the Public Observatories in Japan(Text in Japanese)" (Kuroda, 1993), copies of which are distributed to astronomical facilities.

In this paper, we report present status of the public observatories in Japan, which is based on the replies to our quationnaire.

2. Method and items of a Quattionnaire

We sent copies of our quationnaire to 120 public observatories. (Their location map is shown in Appendix 1.) A quationnaire has the following items:

1. Name of facility and/or observatory
2. Address, telephone and facsimile numbers
3. The authorities

4. Name of managing director and/or director of observatory
5. The number and official titles of experts of astronomy
6. Organization chart
7. The date of foundation
8. Closed days, and the opening and closing times
9. Admission fee
10. Budget of a year
11. Details of telescopes
12. Details of observational equipments and observation room
13. Availability of telescopes
14. Activities
15. Exhibitions
16. Miscellaneous

3. Results and Discussions

We get replies from 110 public observatories (replied rate was 91.7 %).

Increment of reflectors and refractors are shown in figure 1. It appars that telescopes, especially reflectors are rapidly incresing from 1980s. Large telescopes also appear to be increasing (figure 2). About 40 observatories have telescoples with more than 50cm aperture. (Their list is presented in Appendix 2.) There are even a large telescope as 1m aperture. One of the reasons of apearrance of such a large telescope is rivalry among self-governing communities. Another reason is that star watching and/or observation of stars are attractive to many people.

The detectors and other equipments are also becoming high-grade (figure 3). About half of observatories have a high-sensitive video camera. Image proccessor, solar H_α filter, and other advanced equipments are also widely used. Among them, cooled CCD camera, spectrograph, and photoelectric photometer will make an academic research possible. However, there are few experts who can operate their equipment well.

Now, we look over the results on workers in public observatories. Figure 4 indicates the autorities of the observatory. About 90% of public observatories are managed by the national and local governments. Other 10% are private observatories.

The distribution of the number of full-time workers is shown in figure 5. Surprisingly, about 11% of the observatories have no worker at all and more than half of them have less than three workers.

Furthermore, we point out that the employment system of experts has not been established yet. In fact, very few observatories have employed their worker as a research fellow or as a curator.

In addition to above results, there is also a problem on instruction of public observations. At more than half of observatories, public observations are instructed by volunteers (figure 7). Considering the number of full-time workers into account, these observatories seem to be unable

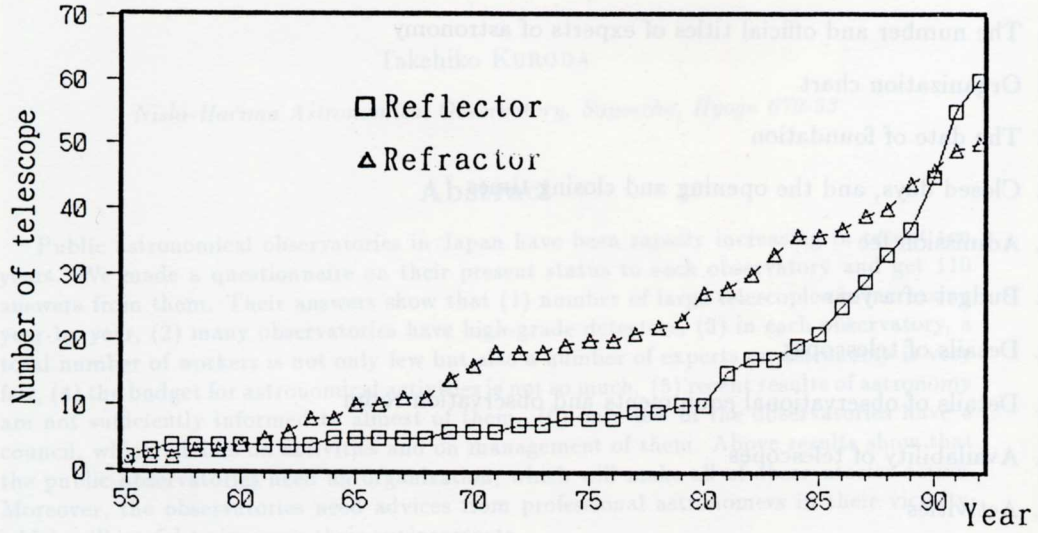


Fig. 1. Increment of installed telescopes.

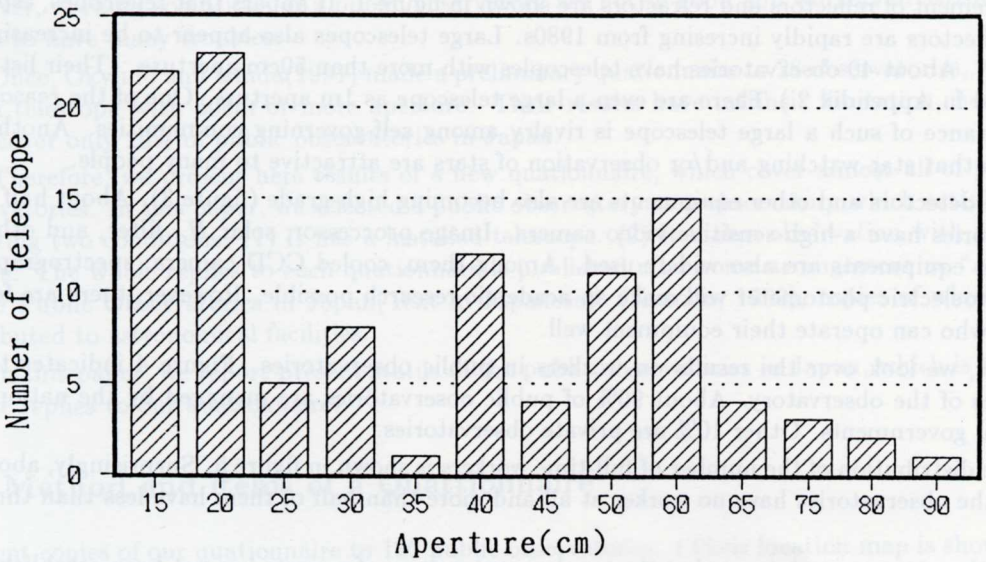


Fig. 2. Number of telescopes as aperture.

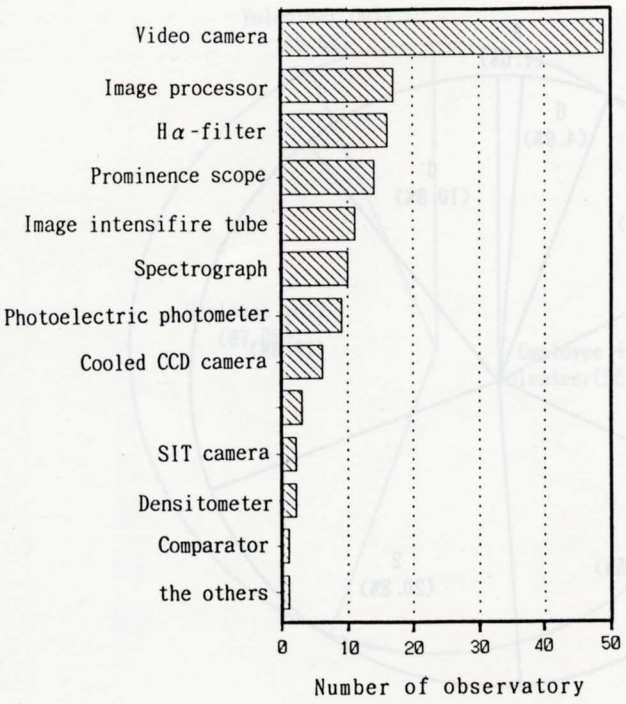


Fig. 3. Detectors available in each observatory.

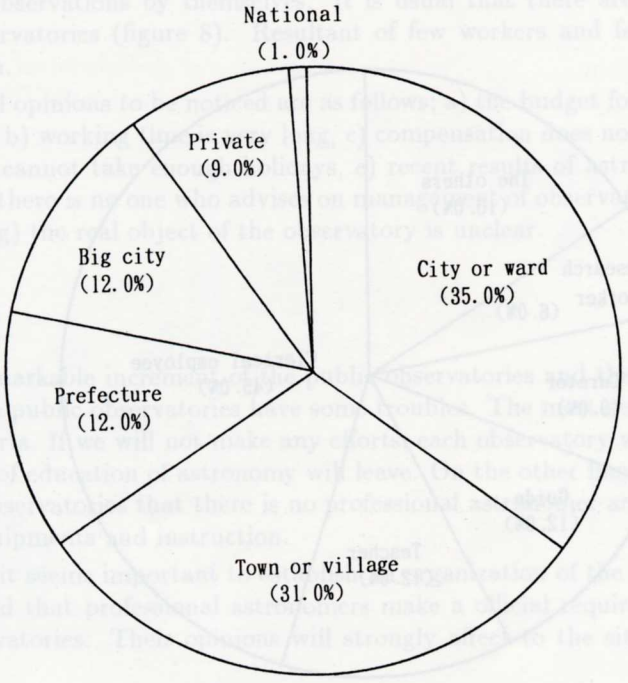


Fig. 4. Authorities of the observatory.

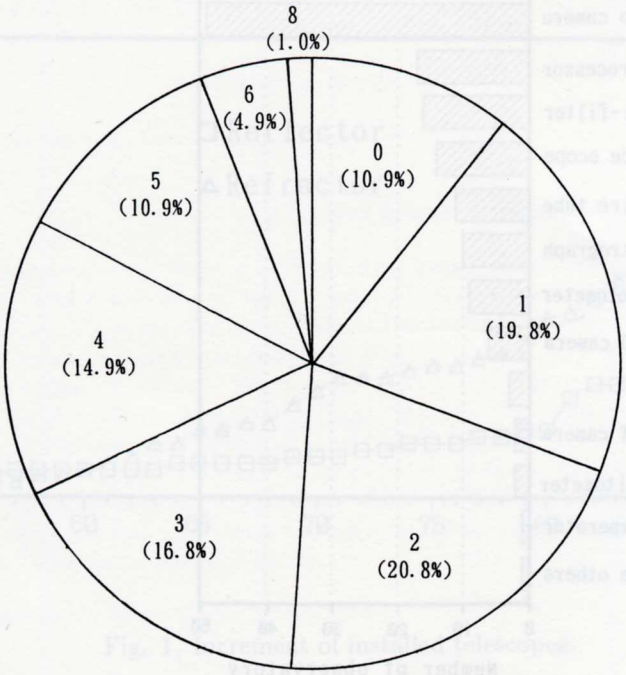


Fig. 5. Number of full-time workers of the observatory.

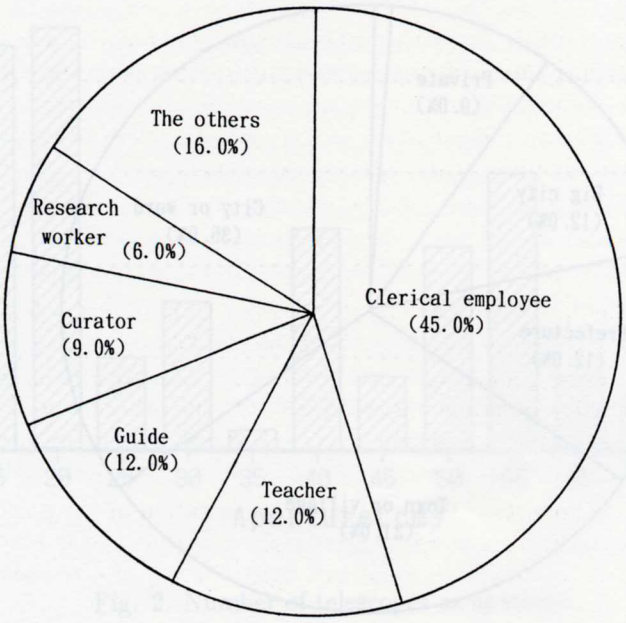


Fig. 6. Official titles of experts of astronomy.

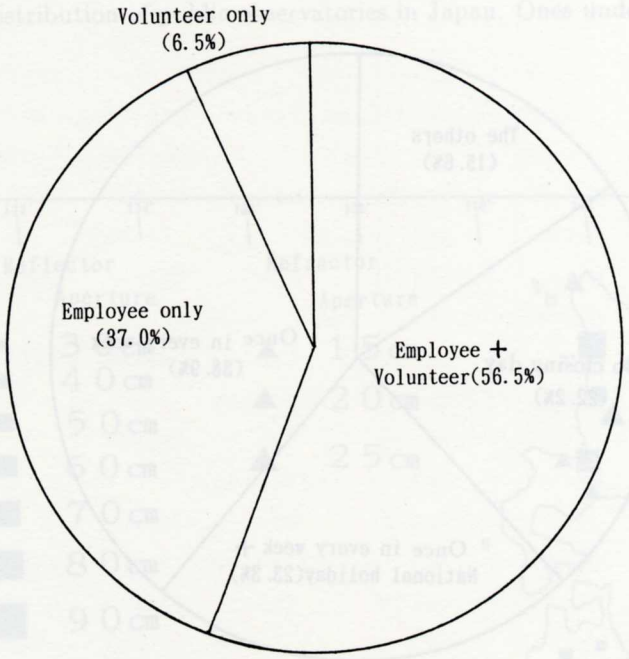


Fig. 7. Instructor of public observations.

to instruct public observations by themselves. It is usual that there are few regular closing days at public observatories (figure 8). Resultant of few workers and few holidays must be overworking of them.

Freely described opinions to be noticed are as follows; a) the budget for astronomical activities is not so much, b) working time is very long, c) compensation does not correspond to their hard work, d) they cannot take enough holidays, e) recent results of astronomy are not sufficiently informed, f) there is no one who advises on management of observatory and on activities of observatory, and g) the real object of the observatory is unclear.

4. Conclusion

Can we glad the remarkable increment of the public observatories and the large telescopes? It seems that all of the public observatories have some troubles. The most serious problem is lack of workers and experts. If we will not make any efforts, each observatory will be inactive and a golden opportunity of education of astronomy will leave. On the other hand, it is a problem for the authorities of observatories that there is no professional astronomer around them, who can make advises on equipments and instruction.

As a first step, it seems important to establish an organization of the public observatories. Moreover, it is urged that professional astronomers make a official requirement to the autorities of public observatories. Their opinions will strongly affect to the situation of the public observaories.

I thank the public observatories for their cooperation. I also thank Miss Yoko Utsumi for arranging data of the quationnarires.

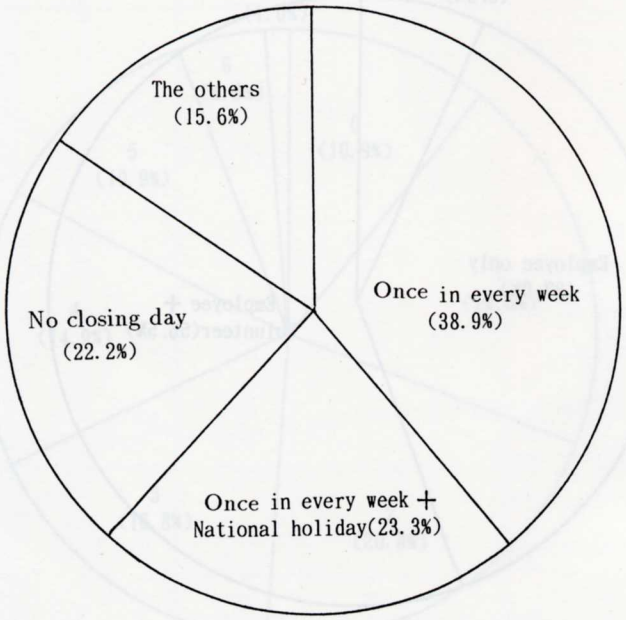


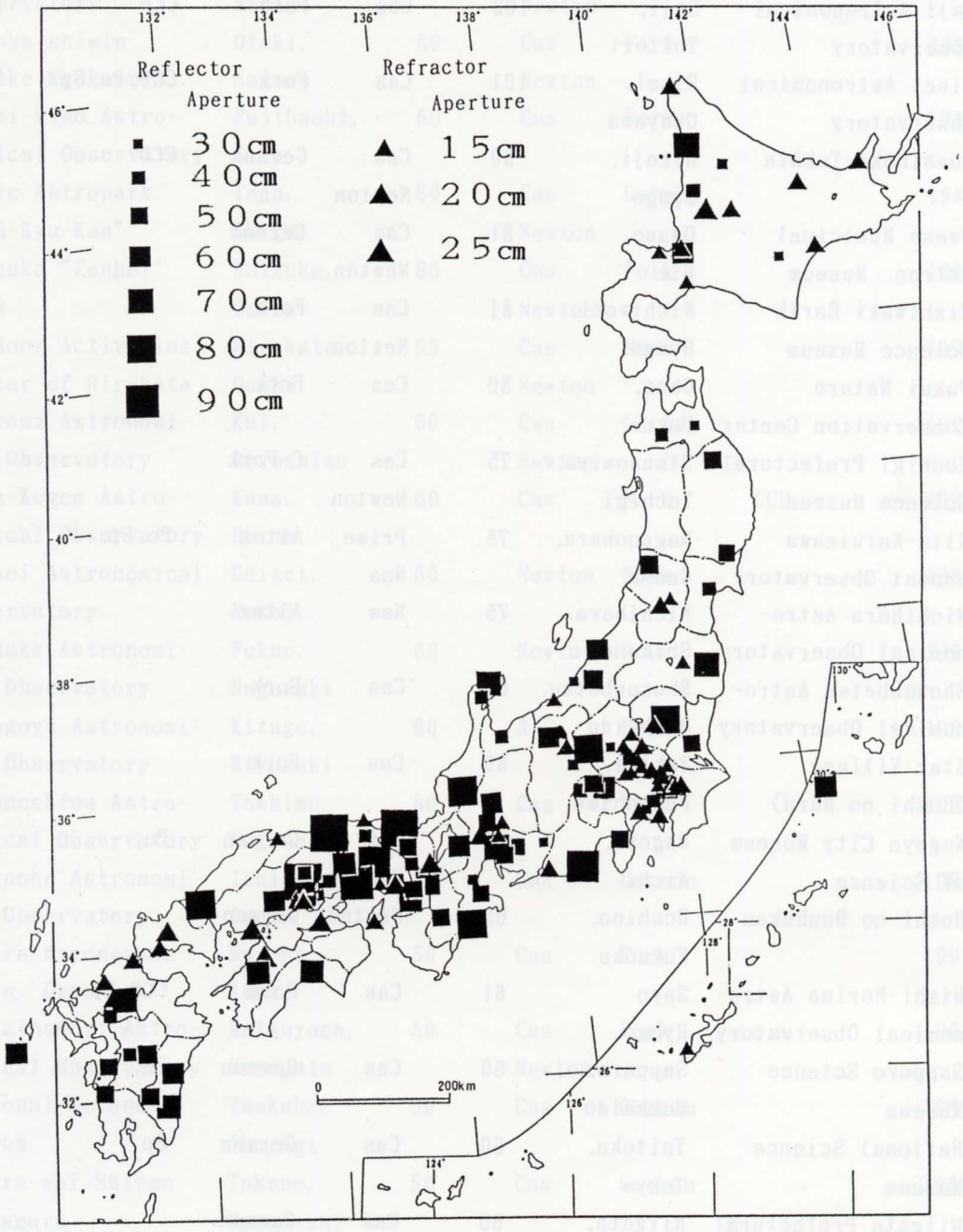
Fig. 8. Regular closing days.

References

Okyudo, M., and Ishida, T., 1991, in *The 5-th Meeting of Astronomical Education*, ed. T. Sawa, (Society for Teaching and Popularization of Astronomy), p202 (Text in Japanese).

Kuroda, T., 1993, *A List of the Public Observatories in Japan*, Nishi-Harima Astronomical Observatory, (Text in Japanese).

Appendix 1: Distribution of public observatories in Japan. Ones under construction are also included.



Appendix 2: List of public observatories which have Telescopes with Apertures over 50cm.

Observatory	Location	Aperture (cm)	Focus	Mounting	Accessories	Since
*Saji Astronomical Observatory	Saji, Tottori	103	Cas	Fork	CCD	1994
*Bisei Astronomical Observatory	Bisei, Okayama	101	Cas	Fork	CCD, Pe, Sp	1993
*Hoshinoko-Yakata	Himeji, Hyogo	90	Cas Newton	German	CCD	1992
*Owase Municipal Astron. Museum	Owase, Mie	81	Cas Newton	German		1990
*Nishiwaki Earth Science Museum	Nishiwaki, Hyogo	81	Cas Newton	Fork		1993
*Fukui Nature Conservation Center	Ohno, Fukui	80	Cas	Fork		1990
*Tochigi Prefectural Science Museum	Utsunomiya, Tochigi	75	Cas Newton	C-Fork		1988
*Kita-Karuizawa Sundai Observatory	Naganohara, Gunma	75	Prime Nas	Altaz	Pe, Sp	1984
*Nichihara Astronomical Observatory	Nichihara, Shimane	75	Nas	Altaz		1985
*Shosanbetsu Astronomical Observatory	Shosanbetsu, Hokkaido	65	Cas	Fork		1989
*Star Village (Hoshi no Mura)	Takine, Fukushima	65	Cas	Fork		1991
*Nagoya City Museum of Science	Nagoya, Aichi	65	Cas Newton	German	Pe	1986
*Hoshi no Bunkakan	Hoshino, Fukuoka	65	Newton	German		1991
*Nishi-Harima Astronomical Observatory	Sayo Hyogo	61	Cas	Fork	CCD, Sp	1990
*Sapporo Science Museum	Sapporo, Hokkaido	60	Cas	German	Pe	1981
*National Science Museum	Taitoku, Tokyo	60	Cas	German	Sp	1960
*Niigata Prefectural Science Museum	Niigata, Niigata	60	Cas	German		1981

*Yanagida Astronomical Observatory	Yanagida, Ishikawa	60	R-C	Fork		1993
*Machida-shi Shizen Kyukamura	Kawakami, Nagano	60	Cas Newton	Fork		1991
*Ogawa Astronomical Observatory	Ogawa, Nagano	60	Cas Newton	German	CCD	1991
*Nagoya-shimin Ontake Kyukamura	Otaki, Nagano	60	Cas Newton	Fork		1993
*Nishi-Mino Astronomical Observatory	Fujihashi, Gifu	60	Cas	Fork		1990
*Dynic Astropark "Ten-Kyu-Kan"	Taga, Shiga	60	Cas Newton	German		1987
*Kaizuka "Zenbei" Land	Kaizuka, Osaka	60	Cas Newton	Fork		1992
*Outdoor Activities Center of Hirakata	Hirakata, Osaka	60	Cas Newton	Fork		1992
*Uneyama Astronomical Observatory	Kui, Hiroshima	60	Cas Newton	German		1990
*Kuma-Kogen Astronomical Observatory	Kuma, Ehime	60	Cas	Fork	CCD	1992
*Geisei Astronomical Observatory	Geisei, Kochi	60	Newton	Fork		1981
*Onidake Astronomical Observatory	Fukue, Nagasaki	60	Newton	Fork		1991
*Nakagoya Astronomical Observatory	Kitago, Miyazaki	60	R-C	Fork		1988
*Nakanoshima Astronomical Observatory	Toshima, Kagoshima	60	Cas	Fork		1991
*Ichinohe Astronomical Observatory	Ichinohe, Iwate	50	Cas	German		1989
*Kirara-Muroneyama Asron. Obs.	Murone, Iwate	50	Cas	Fork		1993
*Chokainomori Astronomical Observatory	Matsuyama, Yamagata	50	Cas Newton	Fork		1993
*National Science Museum	Tsukuba, Ibaragi	50	Cas	German		1990
*Hamura-shi Shizen Kyukamura	Takane, Yamanashi	50	Cas	German		1989
*Gifu Municipal Science Museum	Gifu, Gifu	50	Cas	German	Pe, Sp	1980

*Gekko Astronomical Observatory	Kannan, Shizuoka	50	Cas Newton	German		1975
*Owariasahi Skyward Asahi	Owariasahi, Aichi	50	Cas Newton	German		1992
*Kyoto Prefectural Tanba Recreation Park	Tanba, Kyoto	50	Cas	German		1986
*The Science Museum, Osaka	Kitaku, Osaka	50	Cas Newton	Fork	CCD, Pe, Sp	1989
*Rokko Astro Center	Rokkosan, Kobe	50	Cas Newton	German		1990
*Kurashiki Science Center	Kurashiki, Okayama	50	Cas Newton	Fork		1993
*Seiwa-Kogen Astronomical Observatory	Seiwa, Kumamoto	50	Newton	German	CCD, Pe	1993
*Myui Astronomical Observatory	Ryugatake, Kumamoto	50	Cas	German		1990
*Tachibana Astronomical Observatory	Takasaki, Miyazaki	50	Cas	German		1991
*Izumi-shi Seinen no Ie	Izumi, Kagoshima	50	Cas	German		1969

Abbreviations

Cas: Cassegrain Prime: Prime Focus Nas: Nasmyth Focus
R-C: Ritchey-Chretien Altaz: Altazimuth C-Fork: Cantilever Fork
CCD: Cooled CCD Camera Pe: Photoelectric Photometer
Sp: Spectrograph