The Roots of the Study of Modern Astronomy in Nagano Prefecture
- Various activities of the Suwa Astronomy Club -

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Abstract

In recent years, Nagano Prefecture has been promoted activities to using "space" as an asset for tourism and education under the slogan "Astro-Nagano". To find the roots of "Astro-Nagano", we began to study the modern astronomical history of Nagano Prefecture. Our first research target was the Suwa Astronomy Club, Japan's first citizens' astronomy club, founded in 1922. The Suwa Astronomy Club still exits and will celebrate its 100th anniversary in 2022.

The Suwa Astronomy Club engages two main activities: astronomical observation and nature conservation. In their astronomical observations, club members have actively observed variable stars. With respect to nature conservation movement, they have campaigned for the prevention of light pollution. In this paper, we will give an overview of the various activities of the Suwa Astronomy Club that are currently known.

1. Introduction

In recent years, Nagano Prefecture has promoted activities using "space" as an asset for tourism and education under the slogan "Astro-Nagano" (Figure 1) [1]. Nagano Prefecture is literally the closest prefecture to space, as it has the highest average altitude and the highest average residential altitude in Japan. Moreover, beautiful starry skies can be seen in many places. This has been shown by the Astro-Nagano Working Group for Continuous Observation of the Starry Skies, which has conducted night sky brightness surveys at many locations in Nagano Prefecture [2]. But what about the historical and cultural aspects? Working Group of Cultural Astronomy in Nagano was established to investigate this question.

The group's main activity is currently the research and study of modern astronomical history up to the present day. The first target for this research is the Suwa Astronomy Club, Japan's first citizens' astronomy club, which was established in 1922. The society exits still and will celebrate its 100th anniversary in 2022.

Figure 1: Astro-Nagano project.

2. Overview of the Suwa Astronomy Club

The Suwa Astronomy Club has produced many talented people, including Kazuaki Gomi, who discovered the nova, CP Lacertae, and Masaaki Furuhata, who became the director of the Tokyo Astronomical Observatory (now the National Astronomical Observatory of Japan). Kenichi Fujimori, who has been observing the Sun for nearly 70 years since 1954, is also a member of the club. The quality of astronomical observation by the club is high, and the results of variable star observations have been reported in the Astronomical Herald (Monthly Report of the Astronomical Society of Japan). Another member of the Suwa Astronomy Club, Masahiro Aoki, became active in the nature conservation movement. Aoki played a central role in the campaign against the construction of the Venus Line (a road passing through Utsukushigahara highland) and the Japan Starry Sky Protection Association (a campaign against light pollution).

Two reasons suggest the importance of the Suwa Astronomy Club. The first reason is that the activities of the Suwa Astronomy Club may have encouraged the creation of the present-day “Astro-Nagano”. These activities may also be related to the establishment and evolution of various clubs, observatories, and social education facilities in the prefecture. The second reason is that it may be considered a junction of astronomical culture between eastern and western Japan. These are still hypotheses, however, and further research is needed.

3. The Transition in Science Education and the Establishment of the Suwa Astronomy Club

Many details about the establishment of the Suwa Astronomy Club remain unknown, but it seems to have been related to science education. The "History of Amateur Astronomy in Japan" has the following description[3]:

In 1921, a major revision was made to the science textbooks edited by the prefectural education association, and astronomy was introduced. In 1921, a major revision was made to include astronomy in the textbooks, and elementary school teachers across the prefecture were required to take a new course in astronomy. Issei Yamamoto (assistant professor at Kyoto University at that time) was invited as a lecturer, and Shigeru Kanda (Tokyo Astronomical Observatory) and Takehiko Matsukuma (Tokyo Astronomical Observatory) also gave lectures when they visited Nagano Prefecture for observation. At this time, the people who served as facilitators at the various workshops formed the branch of the Astronomical Society.

“The Astronomical Society” described here is the present-day “Oriental Astronomical Association”. From the establishment of the Astronomical Society’s Suwa branch, it seems that the members were mainly teachers and other adults. In order to join the Suwa branch of the Astronomical Society, a membership fee was required. Consequently, children who could not afford the fee gathered together to form the Suwa Astronomical Society of Japan. This history is also recorded in the "History of Amateur Astronomy in Japan" [4]:

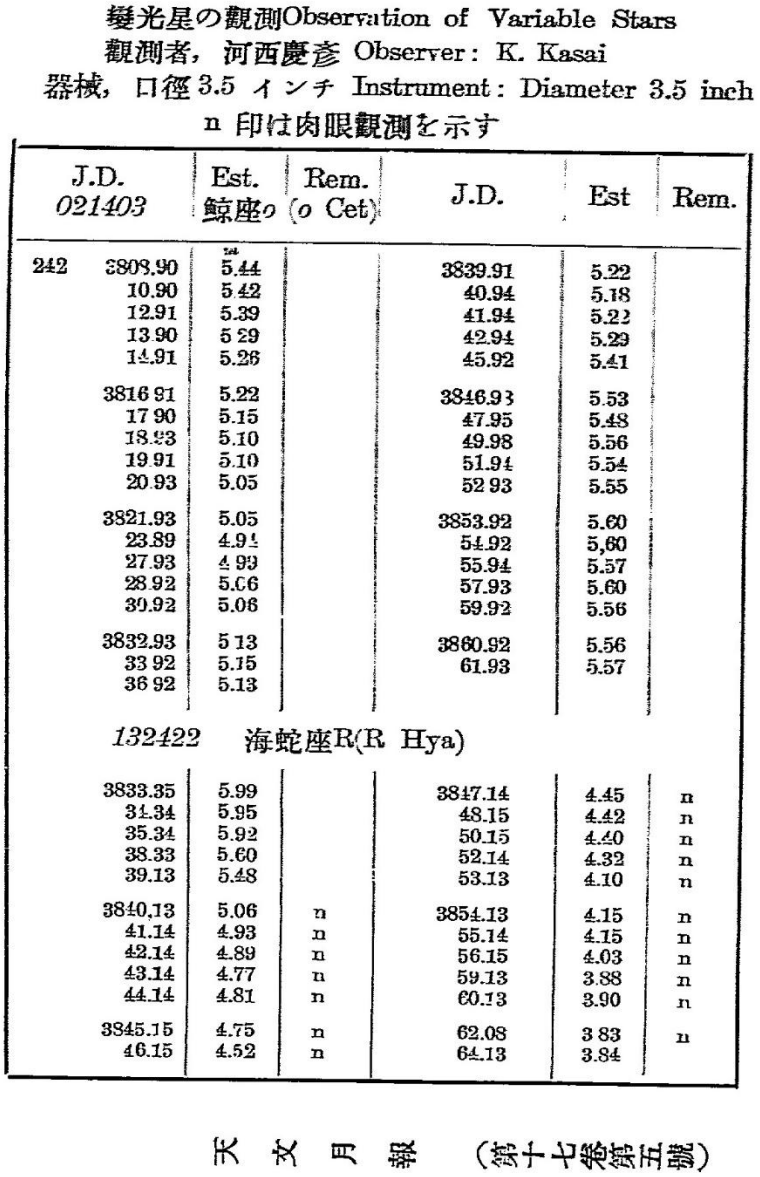
In Suwa, there was a Suwa branch of the Astronomy Club established by Misawa. But, Kasai often handed out hand-printed star guides called "Friend of Stars" to children who could not pay the membership fee. The group grew to more than a dozen people, and in 1922, Kasai became president and the Suwa Astronomy Club was established. The members included Kiyoharu Hama, Takeharu Komatsu, Tsuneo Kouryo, Masaaki Furuhata, Etsuo Ushiyama, Masaaki Imai, and Yoshitada Kasai.

The change in the content of elementary school science appears to have led to the formation of the Suwa Branch of the Astronomy Club and the Suwa Astronomy Club. While the above description is supplied by “the History of Amateur Astronomy in Japan”, additional information is lacking, and much remains unclear

about the history of the club's establishment and activities. The Chino City Yatsugatake Museum has a collection of materials belonging to Kazuaki Gomi, a former president of the Suwa Astronomy Club, and may include materials about the establishment of the Suwa Astronomy Club and variable star observations. By investigating these primary materials, we hope to clarify the origins of the Suwa Astronomy Club and the details of its activities.

3. Astronomical Observation

The Suwa Astronomical Club engaged in high-level astronomical observations, especially observations of variable stars, from an early date. In 1924, when the Astronomical Herald (Monthly Report of the Astronomical Society of Japan) added a new column for observations of variable stars, the first data listed was that of Kasai (o Cet, R Hya, etc.) (Figure. 2) [5]. The "History of Amateur Astronomy in Japan" [6] contains a list of observers of variable stars who submitted reports to the Notices in the Astronomical Monthly prior to 1943. Among them, 26 were from Nagano Prefecture, and 12 from Kami-Suwa, indicating that observation of variable stars was active.



變光星の觀測Observation of Variable Stars
觀測者，河西慶彥 Observer: K. Kasai
器械，口徑 3.5 インチ Instrument: Diameter 3.5 inch
n 印は肉眼觀測を示す

J.D. 021403		Est.	Rem.	J.D.	Est	Rem.
		鯨座o (o Cet)				
242	3808.90	5.44		3839.91	5.22	
	10.90	5.42		40.94	5.18	
	12.91	5.39		41.94	5.22	
	13.90	5.29		42.94	5.29	
	14.91	5.26		45.92	5.41	
	3816.91	5.22		3846.93	5.53	
	17.90	5.15		47.95	5.48	
	18.93	5.10		49.98	5.56	
	19.91	5.10		51.94	5.54	
	20.93	5.05		52.93	5.55	
	3821.93	5.05		3853.92	5.60	
	23.89	4.94		54.92	5.60	
	27.93	4.93		55.94	5.57	
	28.92	5.06		57.93	5.60	
	30.92	5.06		59.92	5.56	
	3832.93	5.13		3860.92	5.56	
	33.92	5.15		61.93	5.57	
	36.92	5.13				
	132422	海蛇座R(R Hya)				
	3833.35	5.99		3847.14	4.45	n
	34.34	5.95		48.15	4.42	n
	35.34	5.92		50.15	4.40	n
	38.33	5.60		52.14	4.32	n
	39.13	5.48		53.13	4.10	n
	3840.13	5.06	n	3854.13	4.15	n
	41.14	4.93	n	55.14	4.15	n
	42.14	4.89	n	56.15	4.03	n
	43.14	4.77	n	59.13	3.88	n
	44.14	4.81	n	60.13	3.90	n
	3845.15	4.75	n	62.08	3.83	n
	46.15	4.52	n	64.13	3.84	

天 文 月 報 （第十七卷第五號）

Figure 2: In 1924, the Astronomical Herald added a new column for observations of variable stars. The first data set listed was that of Kasai (o Cet, R Hya, etc.)

4. Nature Conservation Movement

Another notable activity of the association was the nature conservation movement. In the 1960s, the Venus Line project was promoted to construct a road through Utsukushigahara highland). When this project got underway, the Association for the Protection of Suwa's Nature and Culture was established to oppose plans to build the road through the former Misayama site in Kirigamine and through Yashimagahara wetland. The chairman of this group was Masahiro Aoki. Eiichi Fujimori, a famous archaeologist, and Jiro Nitta, a writer, were also involved in these activities. Jiro Nitta wrote a novel, "Descendants of the Mist," based on this nature conservation movement.

In 1972, the Japan Association for the Protection of the Starry Sky was established, with Masahiro Aoki as its chairman. In the same year, he requested a meeting with Takeichi Oishi, the first Director General of the Environment Agency and delivered a petition for light pollution control, particularly on the night of the Giacobini (Draconid) meteor shower [7].

Problems related to light pollution continue to this day. In 2021, the Shiojiri Star Association led a petition drive calling for the enactment of an ordinance to prevent light pollution [8]. Also in 2021, the Shiojiri Star Association and others signed a petition asking Nagano Prefecture to enact an ordinance to prevent light pollution.

5. Exchange between Eastern and Western Japan

As the establishment of the Suwa Astronomy Club was related to Issei Yamamoto, a deep relationship existed between him and Nagano Prefecture. Issei Yamamoto was also involved with Nagano astronomers in various ways, e.g., guiding Katsue Misawa in his solar observations [9] and encouraging Noboru Nakazawa of Matsushiro to build an observatory in his hometown [10,11,12].

A close relationship with Shigeru Kanda of the Tokyo Astronomical Observatory, and when the Kushiike meteorite fell in 1920, Noboru Nakazawa collected eyewitness reports from the surrounding area and reported them to Shigeru Kanda [13]. Shigeru Kanda may also have been a leader in the observation of variable stars by the Suwa Astronomy Club, including Kasai.

Further detailed research is needed on these subjects. Moreover, it is necessary to ascertain the connection of the club with Yamamoto or Kanda in other areas. Comparisons with other regions will help to clarify the characteristics of historical astronomy in Nagano Prefecture.

6. Summary

This paper introduced our groups research on the Suwa Astronomy Club. The current focus of our activities is research on modern astronomical history, centering on the Suwa Astronomy Club. Nonetheless, many other research subjects could be persued, and we believe that the activities of our association will continue over the long-term. If you are interested, please contact Suyama. For more information about the activities of the society, please refer to the website of Working Group of Cultural Astronomy in Nagano [14].

CONTENTS

[1] Nagano Prefecture is the Space Prefecture homepage (https://www.nro.nao.ac.jp/~uchuuken/html/index.html#).

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[12] Toru Suyama (2016) "About the Culver Telescope: A telescope more than 100 years old", Bulletin of Nagano City Museum, No. 17 (Nature), p. 15－19.
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[14] Working Group of Cultural Astronomy in Nagano (https://uchuuken.jpn.org/bunka/).