The Ainu Constellations

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What is Ainu and Ainu People

Ainu people is an indigenous group of people who now lives in Tohoku and Hokkaido in Japan, Sakhalin and Kuril Islands in Russia. In old days, they also lived in the other part of Japan and one of the origins of the Japanese people.

The word “Ainu” means human in Ainu language.
What is Ainu and Ainu People

Before 19th century, Ainu people used Ainu language and lived on hunting. In 19 and 20th centuries, the Japanese government forced cultural assimilation. As a result, Ainu people use Japanese language and a lot of original customs have been lost.

1904 photograph, taken from the book “Ainu: Spirit of a Northern People” (from Wikipedia)
Everything has soul
And
Significance to exist in this world

Ainu’s religion is Animism.
The basic concept is “Everything has soul and significance to exist in this world.”
Today, Ainu people use Japanese language as their first language. The Ainu culture is being preserved, handed down and outreach mainly in Hokkaido but many have been lost.
Dr. Tomio Sueoka (1931 - 2002)

Dr. Tomio Sueoka have collected the Ainu constellations in mid 20th century. He visited many Ainu people in Hokkaido and compiled his hearing investigations.
His research was summarized in his books, but they are not highly evaluated among the Ainu researchers. This is because Dr. Sueoka was an engineer and his data collection method did not meet the academic requirements in ethnology. Dr. Sueoka collected more than 100 Ainu constellations.
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【Method】
Organizing the Existing data

Literature Research

Field Research

I investigated the meanings and origins of the Ainu constellations. My point is “why did the Ainu people give certain names for constellations?”

Based on the Ainu’s animism, everything has soul and significance to be in this world. So I assume that there should be certain meanings behind the constellations.

First, I organized the Ainu constellations collected by Dr. Sueoka. That includes the names, their locations in the sky, and geographical area where the constellations were used. Then I made a star chart and a planisphere.
### The Ainu Constellations

The Ainu Constellations reflects the view of the nature of the Ainu, an indigenous people in Hokkaido, Japan. Today, only few people can recreate the Ainu Constellations even among the Ainu people and they seldom attract attention. However, an old literature “ezo kouen moshiagua”, the Japanese-Ainu translation corpus published more than 200 years ago, includes a dozen or two Ainu constellations.

The Ainu Constellations in this planisphere were collected by Dr. Tomio Sueno (1931-2002), who has visited many Ainu people for decades from 1950s. He compiled his hearing investigations and included the constellations with high reliability in his books “Ainu ro hou Star of Ainu” and “Ainurari no me wa onatai (Constellations and Traditions of Ainu people).” One asterism may have different names in different places, and the total number of constellations well surpasses 100. By compiling the constellations in the books written by Dr. Sueno and overlaying them on a star chart, we can find Ainu’s humor and keen eye to the nature; the constellations reflect history of Hokkaido, life of wild animals and climate changes.

This planisphere is designed to show the sky seen from Hokkaido (41-45 degrees north latitude, 139-145 degrees east longitude). This planisphere shows the Ainu constellations and 88 modern constellations. 24-hour time is marked on the rotating disk and the calendar delie is attached to the basic plate with a star chart. The circular frames in the rotating disk show the areas of the sky seen from the places at latitudes of 41-45 degrees north. Adjusting the date and time by reference to the latitude/longitude table, you can find the locations and motions of the stars seen from Hokkaido.

*The names of the constellations are written with Roman characters based on the pronunciation of the Ainu language. The notations are based on the reference articles and may be different from the current Ainu language notations.*

### Location of Hokkaido (East Longitude / North Latitude)

<table>
<thead>
<tr>
<th>Location</th>
<th>Longitude</th>
<th>Latitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abashiri</td>
<td>144° 6' 25&quot;</td>
<td>44° 0' 11.4&quot;</td>
</tr>
<tr>
<td>Asahikawa</td>
<td>142° 21' 34&quot;</td>
<td>43° 46' 15&quot;</td>
</tr>
<tr>
<td>East</td>
<td>140° 6’ 39”</td>
<td>43° 52’ 10&quot;</td>
</tr>
<tr>
<td>Hakodate</td>
<td>140° 4’ 35&quot;</td>
<td>41° 46’ 07&quot;</td>
</tr>
<tr>
<td>Ishikari</td>
<td>140° 2’ 36&quot;</td>
<td>43° 11’ 46&quot;</td>
</tr>
<tr>
<td>Kitami</td>
<td>143° 2’ 35&quot;</td>
<td>43° 48’ 14&quot;</td>
</tr>
<tr>
<td>Kussharo</td>
<td>140° 6’ 33&quot;</td>
<td>42° 54’ 06&quot;</td>
</tr>
<tr>
<td>Kushiro</td>
<td>142° 2’ 34&quot;</td>
<td>43° 59’ 05&quot;</td>
</tr>
<tr>
<td>Moheji</td>
<td>142° 2’ 15&quot;</td>
<td>44° 21’ 23&quot;</td>
</tr>
<tr>
<td>Muroran</td>
<td>140° 3’ 25&quot;</td>
<td>42° 18’ 55&quot;</td>
</tr>
<tr>
<td>Nemuro</td>
<td>145° 3’ 39&quot;</td>
<td>43° 19’ 48&quot;</td>
</tr>
<tr>
<td>Obihiro</td>
<td>143° 3’ 47&quot;</td>
<td>42° 35’ 27&quot;</td>
</tr>
<tr>
<td>Rumoi</td>
<td>141° 3’ 13&quot;</td>
<td>43° 56’ 28&quot;</td>
</tr>
<tr>
<td>Supporo</td>
<td>141° 2’ 49&quot;</td>
<td>43° 0’ 51&quot;</td>
</tr>
<tr>
<td>Urakawa</td>
<td>142° 4’ 06&quot;</td>
<td>42° 10’ 07&quot;</td>
</tr>
<tr>
<td>Wakkanai</td>
<td>141° 4’ 23&quot;</td>
<td>45° 24’ 56&quot;</td>
</tr>
</tbody>
</table>

I also investigated many articles to know the meanings of the motif of constellations. For example, I read Ainu ethnology books to know their customs. I also read books and research papers on animals to know their biology.
In addition, I went to Hokkaido to hear local traditions and gather information on Ainu constellations. Of course, I watched the Ainu constellation by my eyes. As a result, I found many Ainu constellations are named based on their motion in the sky and related to many things on the ground.
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Characteristic Ainu constellations

Kamuy rukoti (カムィルコチ)

(Now I introduce three characteristic Ainu constellations.)

“Higuma” Brown bear lives in Hokkaido.
The Ainu people regard brown bear as the god of mountains.

Photos: Kushiro Zoo
Characteristic Ainu constellations

Kamuy rukoti (カムィルコチ)

This constellation is located in the Capricornus, the Sea Goat. It appears in the eastern sky in August and disappear in west in December. This reflect the biology of brown bear.
Characteristic Ainu constellations

Kamuy rukoti (カムィルコチ)

From summer to autumn, salmon and trout come back to rivers. There are a lot of nuts in mountains in autumn. Brown bear hibernates in winter. So in the autumn they walk around mountains to get enough nutrition. We can see many footprints in mountains.
Characteristic Ainu constellations

Kamuy rukoti (カムィルコチ)

Brown bears in Hokkaido start hibernation in December. The motion of the constellation “kamuy rukoti” in the sky is synchronized with the actual behavior of brown bears. It disappears in December.
Characteristic Ainu constellations

Rera-caro (レラチャロ)

Rera-caro is located in the modern constellation Corvus (The crow).
Rera-caro means a nozzle of wind.
In Hokkaido, this constellation appears in the eastern sky in March and disappears in the western sky in the end of July.
Characteristic Ainu constellations

Rera-caro (レラチャロ)

In this season in Hokkaido, a strong monsoon sometimes causes cold-summer damage. Ainu people says that wind from east is strong when rera-caro is in east, and wind from the west is strong when rera-caro is in west.
Ainu people regard the wind from east as an evil god of wind, because it causes cold summer damage. The season under the strong monsoon agrees well with the season rera-caro is in the sky.
Oparikep kamuy (オパリケプカムイ) means “God of Tornado” in Ainu. This constellation is located in the constellation Cetus, The Whale. According to Dr. Sueoka, this constellation was used in the southern and southwestern part of Hokkaido.
Characteristic Ainu constellations

Autumn is the best season to see this constellation in Hokkaido. Based on the data collected by the Japan Meteorological Agency, in this season, tornados often appear in the southern and southwestern part of Hokkaido.

Characteristic Ainu constellations

Oparikep kamuy (オパリケプカムイ)

Now we can find that this constellation reflects the local weather.

I found these links between the motion of constellations and actual lives on the ground by making a planisphere. There are many other similar examples.
I found that the Ainu constellations reflects the view of the nature and traditional life of the Ainu people. It is not only by the shapes of constellations, but the motion of constellations has important meanings. I was impressed by Ainu people’s keen eye to the nature.
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Now I conclude my talk.

A variety of constellations are used among Ainu people, depending on the geographical location and local traditions. It is necessary to know the variety of Ainu culture to investigate more on the Ainu constellations. Also I’d like to collect more constellations from historical books and oral literatures.

I’d like to have firm evidences that Ainu’s constellations are useful to their lives.
Deeper Investigation

Utilizing the Ainu Constellations

The Ainu constellations can be a good material for astronomy outreach and tourism, because the constellations reflects Ainu’s culture, climate in Hokkaido, and animal lives. Actually I collaborate with Biratori Town in Hokkaido to utilize the constellations in tourism. I’d like to use the Ainu constellations as a good tool to know interesting aspect of astronomy.
That’s all in my talk.
Thank you very much.

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