



Snowchange Discussion Paper # 13

***Inuit and Chukchi Star lore:
Reflections on Ursa Major, the North Star and Northern
Lights***

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Abstract

In this short discussion paper we have investigated the questions of indigenous, endemic star lore and celestial events. More specifically we have looked at Ursa Major and Polaris stars as iconic Arctic constellations as well as the northern lights, or Aurora borealis, which is prominent in all cultural traditional discourses of the North. Materials have been derived from two long-lasting community-based oral history projects – Igloolik in Canada and Lower Kolyma, Siberia. The Inuit culture in Nunavut is linguistically related to the Lower Kolyma Chukchi, but that region is also home to the Yukaghir, Even and other indigenous peoples.

1. Introduction: Endemic Skies and Indigenous Star lore

With events such as the recent ‘Supermoon’ on the 14th November, 2016, issues of the celestial sphere and star lore are receiving the occasional surge in the imaginations of the northern communities and cultures. At other times they fade away from the daily life. Yet, stars, celestial objects and events of the sky have been central to the Inuit, Chukchi and other Arctic Indigenous societies, as is evident from an oral history of an Inuit spirit person Avva from 1922:

*"Pfft - pfft!"
That is the stars' answer,
and their thanks for being still remembered."¹*



Chukchi Elder Egor Nutendli greets the morning sky, 2006.

¹ In Macdonald 2000

This discussion paper offers initial reflections in the realm of two linguistically related peoples, the Inuits and the Chukchi of North-eastern Siberia, Russia on the questions of star lore related to Ursa Major, Polar Star and Northern lights. It is one of the early, first attempts to position the star lore materials at the Snowchange Oral History Archives to a comparative view. This paper is by no means comprehensive and the work will continue.

For the Inuit star lore questions materials have been derived from the long-term partner process of Snowchange, namely the Igloolik Oral History Project located in Nunavut, Canada. Inuits are an Indigenous society spanning a large geographical home area from Eastern Siberia and Bering Strait to Northern Canada and Greenland. John MacDonald coordinated the Igloolik process from mid-1980s to 2000s. The Igloolik method of documenting oral histories and traditional knowledge remains to date some of the most extraordinary community-driven attempts to work with and preserve, and ultimately revitalise traditional knowledge of a specific community and culture in the Arctic. A group of Elders guided and steered the work².

The Inuit materials regarding the constellations and phenomena discussed in this paper are derived from one of the publications resulting from the Igloolik Oral History Project, namely the “Arctic Sky”³, discussing many of the Inuit astronomical issues. John Macdonald provides a second source of materials from a key lecture presentation and associated notes⁴.

Macdonald⁵ discusses the extent of ‘endemic’ or Indigenous star lore and celestial issues. According to him the issues, knowledge, legends, oral histories and traditions belonging to this realm include, for example:

- Stars and constellations
- Naming traditions, myths
- Endemic relations with the universe, sky, Earth, the environment
- Sun, moon, eclipses, atmosphere
- Navigational questions
- Concepts of time – sun time, star time, ‘new time’, tides
- Traditional calendars, such as the Inuit 13-month-calendar⁶

Siimets⁷ has explored the Chukchi endemic cosmologies and star lore. He argues, interpreting materials from Bogoras that: “The interdependence of the Earth and celestial as well as weather phenomena has a special meaning for mankind for it is the co-existence of the Sun and Moon, day and night, wind, rainfall and soil that creates life and warmth and provides the

² Igloolik Oral History Project starlore documentation was coordinated by the following Inuit elders: Eli Amaaq, Hubert Amarualik, George Kappianaq, Catherine Arnatsiaq, Peter Tatigat Arnattiaq, Emil Imaruittuq, Aipilik Innuksuk, Zipporah Innuksuk, Mark Ijjangiaq, Rosie Iqallijuq, Cain Iqqaqsaq, Inuki Kunnuk, Pauli Kunuk, Michel Kupaaq, Suzanne Niviattian Aqatsiaq, Martha Nasook, Hervé Paniaq, Zachrais Panipakuttuk, Noah Piugaattuk, Philip Qipanniq, François Quassa, Joe Tasiuq, Abraham Ulayuruluk and Rachel Uyarasuk.

³ Macdonald 2000

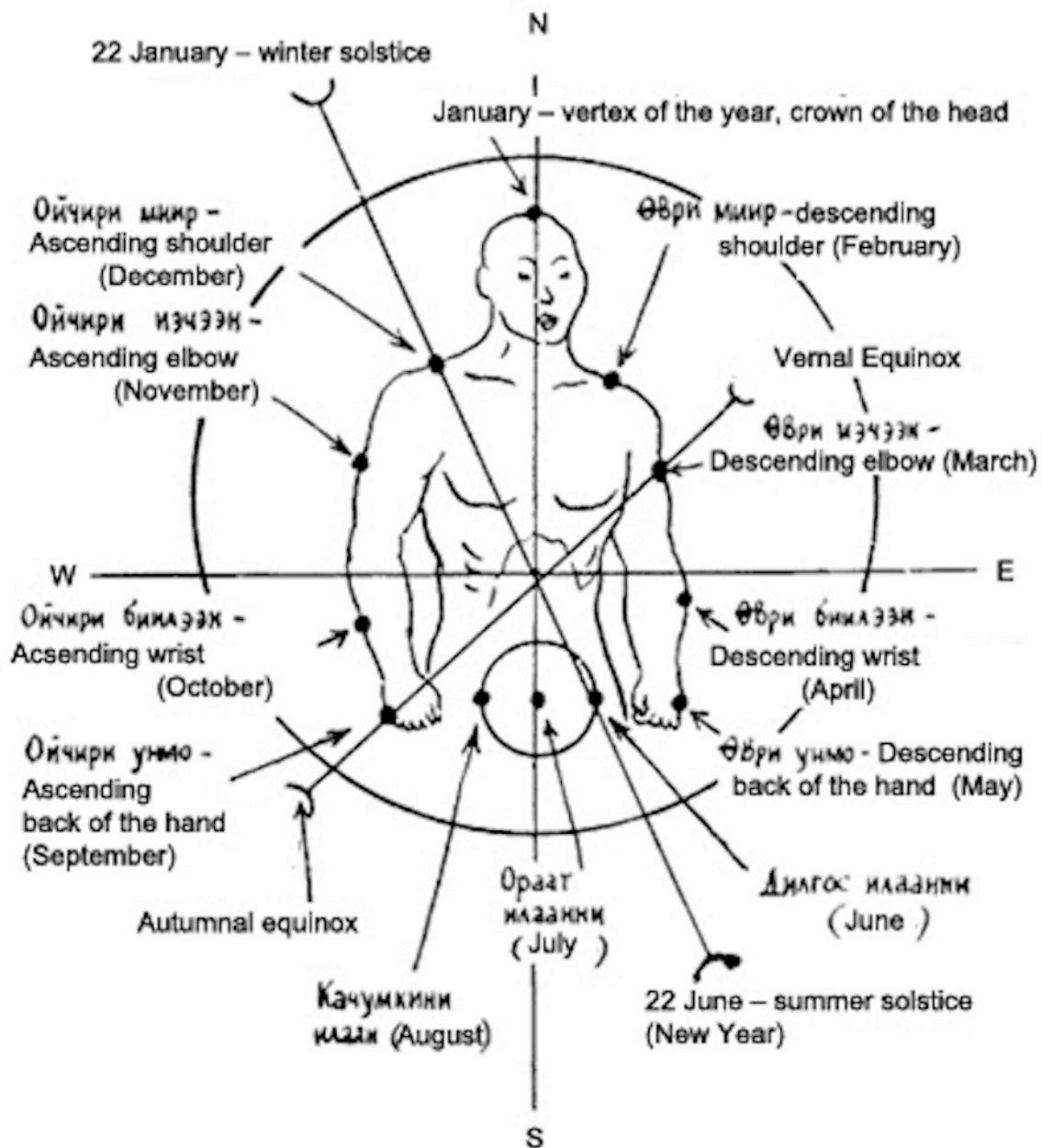
⁴ Held in Tampere, Finland 27.3.2003.

⁵ 2000

⁶ Macdonald 2000

⁷ 2006

daily bread. Over all things there is only one heaven. Stars emerge from the dark sky and their innumerability makes the thinking man answer questions about the essence and origin of life and its purpose. People already meditated on such questions in foregone times and will do the same in the future. In every era there have been attempts to give answers to these questions according to the level of knowledge.”



Even indigenous traditional calendar linking human body, events of the year, celestial bodies and months. Reprinted with the permission from the Institute of the Indigenous Peoples of the North, 2016.

The Chukchi materials in the discussion paper have been collected as a part of the oral history and traditional knowledge work connected with the ECORA UNEP project in the Lower Kolyma, Republic of Sakha-Yakutia, Russia. This work was initiated and led by the late Even scholar, Vasili Robbek, from the Institute of the Indigenous Peoples, Russian Academy of

Sciences. The Snowchange Co-op did the oral history documentation and research⁸. The oral history work is on going.

The elements of Chukchi star lore presented in this paper include mostly traditional knowledge shared by Elders and knowledge holders from the Chukchi, Even and Yukaghir communities of Lower Kolyma. They include for example late Chukchi and Yukaghir Elders Grigory Velvin, Jegor Nutendli and Akulina Kemlil. Relevant literature has been used when necessary. For example Berezkin⁹ indicates that the ethno-astronomy of the Yukaghir is rather poorly known.



Akulina Kemlil (left), Grigorii Velvin (middle) and Jegor Nutendli at the Nutendli base, 2005.

These Elders were and continue to be co-researchers and keepers of tradition in the Lower Kolyma. All of the documented traditional knowledge and oral histories was collected with the communities following the principles of Free, Prior and Informed Consent – FPIC. Nomadic communities of Turvaargin and the families of the involved people have reviewed drafts of these materials prior to publication. Tapes of the materials and the end products been shared with them. Snowchange Co-op continues active, monthly cooperation with the nomadic societies of Lower Kolyma.

⁸ Principal field investigators Tero Mustonen, Kaisu Mustonen, Vyacheslav Shadrin.

⁹ 2005



Tundra Camp of the Nutendli Community, 2007

To position the knowledge and use of stars into the nomadic lifestyles and cultures of Lower Kolyma, Chukchi Zoya Tokareva reflected on the navigation in tundra: *"In the old times the people of the tundra used stars for everything. People travelled much; they have the skills to navigate at nighttime too. My sister [Akulina Kemlil] even says that the northern lights may kill a person, if they are strong. In the old times people travelled with the dogs and reindeer. There was no light, so they navigated using stars."*¹⁰

For the purposes of introductory Inuit and Chukchi star lore, two constellations (Ursa Major, Polaris) and one celestial phenomenon (Aurora borealis or the northern lights) will be explored in this paper. In the future publications, other events and starlore topics, including Sámi, Finnish, Icelandic, Gwitchin, Inupiaq and British Columbian First Nations oral histories are planned to be shared from the Snowchange Oral History Archives.

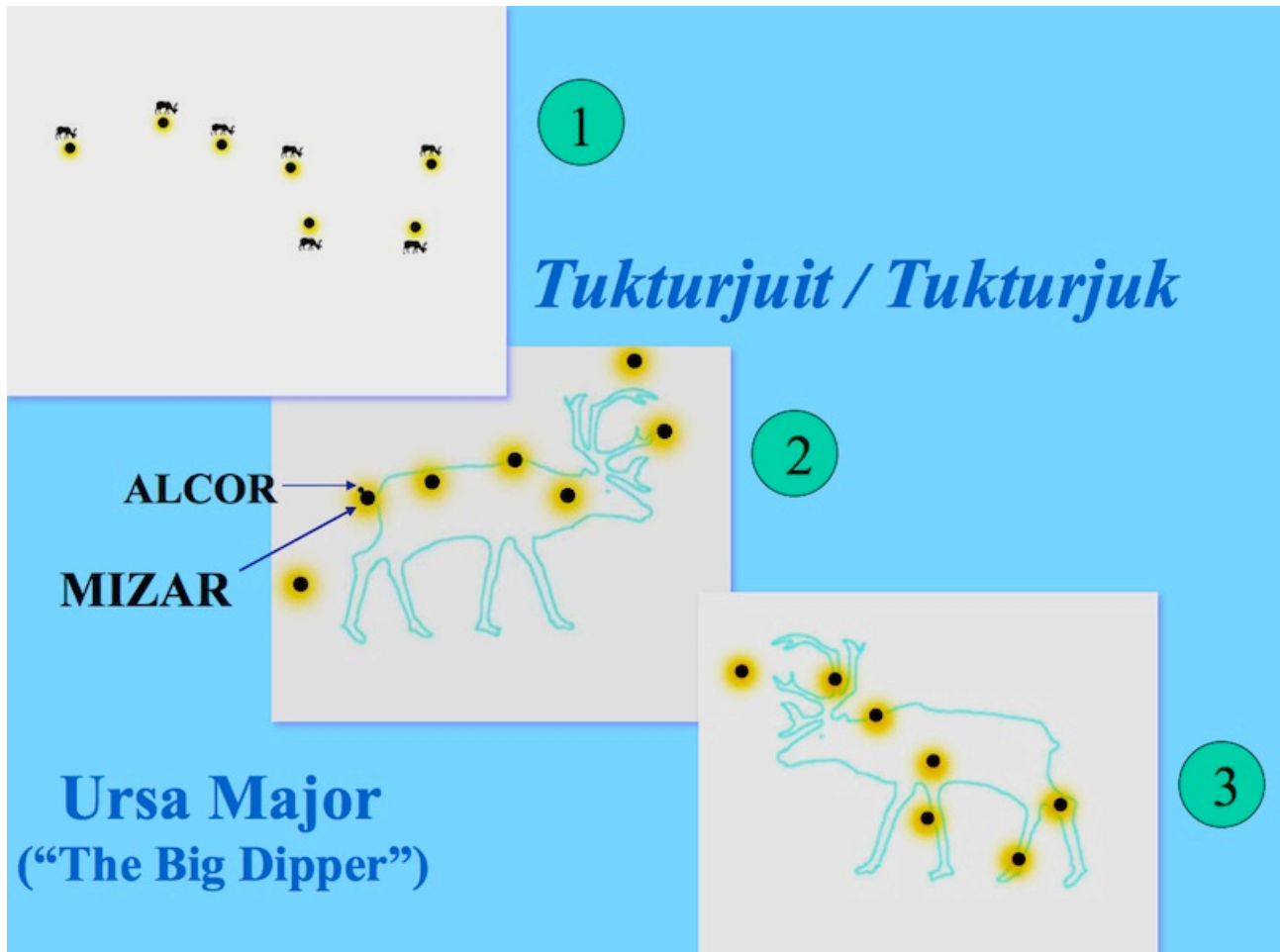
2. Ursa Major or the Big Dipper

Ursa Major, the Great Bear is one of the most prominent northern constellations. The seven brightest stars are known world-over for their prominence on the night sky. Macdonald¹¹

¹⁰ Zoya Tokareva Oral History Tape 2006

¹¹ 2003

explains the Inuit understanding of this constellation: “Ursa Major is popularly known in North America as the ‘Big Dipper’. In Britain it is referred to as ‘The Plough’, or more archaically as “Charles Wain”, a designation reflected in the Scandinavian name for the constellation, Karl's Wagon¹². Inuit call these seven stars in Ursa Major tukturjuk - meaning a “single caribou”- or, more traditionally, tukturjuik - meaning a “group of caribou”.



Constellation Ursa Major, from the Inuit viewpoint, reprinted with the permission of John Macdonald, 2016.

However, Macdonald notes that there are both intergenerational and community differences to the specific meaning, whether the constellation points to a single animal, or a group of caribou: “In Igloolik there’s some debate over which of these two designations to use, singular or plural. More senior the elders the stars of Ursa Major to represent a group of caribou¹³ rather than a single animal. This, by the way, is consistent with the common practice of having animals and persons represented by single stars alone. Those in middle age saw a single caribou comprising the stars¹⁴. A delicate refinement of this latter arrangement has the caribou’s tail represented by the faint star Alcor which, together with Mizar, forms a ‘double star’. Younger Inuit tended to opt for the more obvious, but less imaginative arrangement¹⁵. The very familiarity of Ursa Major seems to make it susceptible to the encroachment of European star-

¹² Swedish: Karlavagnen

¹³ figure 1 in the attached photo

¹⁴ as shown in figure 2

¹⁵ shown in figure 3

lore and may already account for some of the uncertainty surrounding its Inuit designation. In Northern Quebec, for example, the constellation is sometimes called Qallutik. Meaning ‘dipper’, this is an obvious translation of the North American English term for the constellation. And, in one area of West Greenland, Inuit refer to Ursa Major as Kalîp Kamutai. This translates as “Karl’s Sled”, clearly a borrowing from the Scandinavian term ‘Karl’s Wagon’.”¹⁶



Tundra camp of the Turvaurgin Nomadic Community, 2007

For the reindeer Chukchi, the relationship with the stars has been “intimate”¹⁷. Elder Akulina Kemlil, who passed away in 2012, recounted that for her community, the Ursa Major “was a hunting sequence where a human is chasing three reindeer.”¹⁸ Berezkin¹⁹ supports this interpretation. He says that “a moose is being pursued by three brothers and three sisters”. He says: “...variants of the Cosmic Hunt tale demonstrate Eurasian–North-American parallels at the level of minor details which could be explained only by particular historical links between the corresponding traditions. According to the first variant, three stars of the handle of the Big Dipper are hunters and the dipper itself is an animal, while a weak star of the handle, most probably, Alcor, occupies a special place in this picture.”²⁰

Siimets²¹ agrees: “While herding reindeer with the Chukchi I noticed that, firstly, all their principal sacrificial activities are related to reindeer. It is understandable for their entire life depends on the well being of the reindeer herd. Secondly, the supposed help or influence of a

¹⁶ Macdonald 2003

¹⁷ Zoya Tokareva Oral History Tape 2006

¹⁸ Akulina Kemlil Oral History Tape 2006

¹⁹ 2005

²⁰ 2005

²¹ 2006

constellation or planet was sought when making important sacrifices²². I have seen such sacrificial rituals myself and heard Chukchis explain them. When bringing sacrifices, the supposed influence of the Moon, North Star or some other celestial body is used."



Reindeer separation of the Turvaargin community, 2005

Anna Aleksandrovna Kaurgina, a Chukchi Elder living in the community of Kolymanskaya, reflected on the constellation by saying that: *"In the Chukchi language stars are little girls. Ursa Major is umka, meaning polar bear. For Ursa Minor, we name it the child of Umka, or a child of the Polar Bear."*²³

3. Polaris, the North Star

Polaris is known as the polestar, located close to the celestial pole. It is in fact a double star. Macdonald describes the Inuit understanding of Polaris: *"Inuit designations for stars and star groupings fall into several categories. The two principal ones are, first, human and animal personifications; and second 'intrinsic' designations, derived from some feature of the stars in question including, for instance, colour, distance of separation, whether the star is leading or trailing, and in the case of Polaris - the North Star - its apparently fixed position in the sky. The Inuit name for this star, nuuttuittuq, translates as 'it never moves'. This 'guiding star' of the Northern hemisphere's middle latitudes, takes on a questionable reputation in the high Arctic. The problem with Polaris is that its height above the horizon corresponds almost exactly with the latitude of the observer: the further north the observer the higher the star. At the latitude of Igloolik, Polaris reaches the extreme northerly limit of its usefulness as a navigational star. In fact some elders, well-informed about the sky in general, couldn't point it out, while another*

²² for example, offering sacrifices in a full moon

²³ Anna Kaurgina Oral History Tape 2006

*explained that he first learned about the fixed quality of Polaris, not through his own traditions, but from a European explorer who visited the Igloodik area in the late 1930s. However, other elders who'd spent their formative years in areas well south of Igloodik used Polaris as their main navigational star, particularly when they were on moving sea ice at night. And even further south in parts of Northern Quebec Polaris was named turaagaq, meaning 'something to aim at' or a target'."*²⁴

Macdonald positions the Polaris very interestingly in relation to the Arctic location. At higher latitudes it is mostly useless for navigation. Both regions discussed in this paper, Igloodik in Nunavut, Canada and Lower Kolyma in Siberia are located at the 69 degrees North. Cultural shifts and exchanges are apparent also with some of the explorer – Inuit encounter -materials.



Summer nomadic travel, Turvaargin, 2016

Siimets²⁵ gives various Chukchi names for the Polaris, such as *Iluk-enger*²⁶, *Θlqep-enger*²⁷ or *Unp-enger*²⁸. He²⁹ quotes Bogoras who says: "The North Star in the firmament is like a pole or stake driven into the ground around which stars circle, resembling horses or reindeer tied to a pole. Its house is near the Zenith and through its smoke opening it is possible to travel between worlds. Due to that opening the North Star can be seen in all worlds, in the underworld as well as in upper realms, while other stars and constellations are not the same in different realms. At the same time it is believed that the North Star's house is higher up than other houses. Its house is made of ice-like substance and to its top is fixed a light- house-like source of light."

²⁴ Macdonald 2003

²⁵ 2006

²⁶ the Immobile Star

²⁷ the Nail Star

²⁸ the Driven-in Stake Star

²⁹ Siimets 2006

Elders in Lower Kolyma indicate that the Polaris was considered to be a “pillar star”, one that holds the world(s) intact, on pillars. Kristofor Nikolayevich Tretyakov, an Even Elder from the community of Andreyushkino, reflected in 2005 that *“if we are to travel nomadically to a far away place, we need to navigate using the stars in the darkness. Polaris is located in relatively central position in the sky. We also have the Ursa Major. These two [are major ones being used]. Polaris does not move around, it stays put. Always in the same place. Above ones head, almost in the middle. Stars revolve around, but this one stays put. Always.”*³⁰

Another Even knowledge holder, late Innokenti Yakovlevitch Garunin, said in 2006 that: *“We navigate using stars, familiar places and sun, in the tundra. The stars only move to the right. You see which way the stars are moving, and you can go to the left based on that. Polaris, the Yakuts say it always stays put. It is not moving. All other stars move, but that one stays put.”*³¹

Polaris seems to be well known amongst the indigenous societies of Lower Kolyma. Almost all herders and Elders reflected on its fixed position and central location in the sky. Interestingly, Kristofor Nikolayevich Tretyakov said that it is located “almost” in the middle of the sky, pointing to the spatial divisions of the sky and the minute detail by which he observed the stars and celestial phenomena.

3. Aurora Borealis, Northern lights

Aurora borealis or the northern lights are natural electrical phenomenon, which appear often in streams of red, green lights in the sky. Northern or polar lights are caused scientifically thinking by the interaction of charged particles from the sun with the atoms of the upper atmosphere. Aurora Borealis is an iconic event in the higher latitudes and feature prominently in the various cultural discourses and traditional knowledge of the boreal and Arctic region.

³⁰ Kristofor Nikolayevich Tretyakov Oral History Tape 2005

³¹ Innokenti Yakovlevitch Garunin Oral History Tape 2006



A version of the painting by Thomasie Alikatuktuk reprinted from collection of John Macdonald.

Macdonald explains that for the Inuit: "Across the Arctic Inuit beliefs relating to the Aurora Borealis are remarkably consistent, the phenomenon being invariably characterized as spirits of the dead playing a game of football, usually with a walrus skull for a ball, or in the case of the East Greenlanders, a placenta. Those who died from loss of blood through, for instance, childbirth or murder, were confined to the Aurora. The animation of the Aurora attests the football players' exertions while the occasional red, or crimson, coloration of the Aurora symbolizes the manner of their death. The walrus skull here is especially apt. Traditionally, when walrus were killed they would be harpooned in such a manner that they virtually bled to death. This was done to prevent the liver becoming congested with blood; thus it is entirely consistent that walrus heads should share a spirit world reserved for the souls of those who had died from blood loss. Other characteristics more or less universally attributed to the Northern Lights by Inuit are that they make audible sounds when active, and that they can be made to approach closer by whistling. The Aurora was widely feared and it was believed that if they came too close

they could literally cut your head off. Indeed many Igloolik elders remember, as children, being warned by their parents against whistling at the Aurora.”³²

Chukchi knowledge holder Aleksei Nikolayevich Kemlil reflected on the questions of stars and northern lights in Kolyma in 2006: *“You can predict things from the stars. In the wintertime during frosty nights the stars shine brightly. In the tundra zone you can see as the stars rise from the East, a certain big star³³ – if it appears as dim red, it means cold weather will be on its way. You can determine the time from the stars in case you do not have your watch with you. When we herd during the night the reindeer, sometimes we have nothing else to do, so we observe all that happens around us, we look at the stars. At night time you can see very clearly all the positions of the stars at a given time. Elders say that red northern lights influence also the weather. It will bring cold weather. This is what they say.”³⁴*

Kemlil makes many relevant observations. Weather influences the way stars appear above the tundra. As a part of the nomadic herding, the Chukchi have time and space to observe the celestial events and the star positions, sometimes using them for the time keeping. Different colored aurora is linked with traditional weather prediction.

An issue that has been a gap between traditional knowledge and science regarding the Aurora is the sounds they are supposed to make. As Macdonald³⁵ confirms for the Inuits, this has been reported through decades of hunters. In Kolyma at the Turvaargin nomadic community the issue was clear in 2006: *“Northern lights make a shhh-sound. Especially then, when sky is very clear and it is very cold. We say that you should not stare at them for too long, as they can take the spirit of a person, they can tear the spirit of a person away.”³⁶*

Further, the herders were sure that *“The northern lights have their own specific sound. Indeed. When it is cold, they make sounds. They can hum as well. If the aurora is strong, the sound is also more audible. But if the aurora is not so strong, you cannot hear them with your ears. When the lights are low, you can hear the sounds. When you look at them, they can come lower. It is a similar sound as you would take a piece of plastic and rub it in your hair, static electricity. We say the dead people are playing there. We Yukaghirs also say that our ancestors have made a campfire, because of the cold. They are so-called Yukaghir campfires.”³⁷*

Kristofor Nikolayevich Tretyakov, an Even Elder from the community of Andreyushkino had observed similar sounds: *“Northern lights appear usually prior to cold weather in December or in January. When they appear in many colours, it will be colder. Sometimes they make a hissing sound. Šššššš. They only make a hissing sound, when it is very cold.”³⁸*

Pyotr Serafimovich Agafonnikov is an Even Elder and herder from the community of Andreyushkhino. He has observed the skies and stars and other celestial events during his long life in the tundra. In 2005 he said that *“the Elders, the old people, perhaps they really knew*

³² Macdonald 2003

³³ Most likely Sirius

³⁴ Alexey Kemlil Oral History Tape 2006

³⁵ 2003

³⁶ Meeting with the Brigade 4 of the Turvaargin Nomadic Community, 2006

³⁷ Meeting with the Brigade 4 of the Turvaargin Nomadic Community, 2006

³⁸ Kristofor Nikolayevich Tretyakov Oral History Tape 2005

something different, something we do not. They really knew, but we no longer know in the same depth and way as they did. They had certain beliefs based on their ideas of sun and moon being sacred...one time we came out of the shelter on the tundra, and there were two moons in the sky! My grandmother was afraid to look to the heavens. All saw this event. Then the other moon, which looked really like a moon, grew, after that it withdrew, and was as small as a tennis ball. Then it disappeared. Sometimes these kind of things do happen, but we are not surprised. Sometimes when I ski along the coast of the Arctic Ocean and see northern lights, my head buzzes. I can feel the northern lights. Some other people too can feel the northern lights. I can. My grandmother instructed me not to look at them, ever. She said we should not stand outside for long and look at them. Perhaps already back then she knew they can influence your health. Sometimes the northern lights glare on the tundra. It is rather startling when it happens on the tundra. It is not necessarily beautiful. It must affect your health. They make this humming sound inside your head.”³⁹

A recent ‘discovery of science’ confirms northern lights do make sounds⁴⁰ – an observation known to thousands of Northern hunters, fishermen and herders for millennia, yet disputed until 2016 by natural scientists, until finally proved to be ‘true’. According to the science media reports “the popping and crackling sounds associated with *Aurora borealis* (or the Northern Lights) are born when the related geomagnetic storm activates the charges that have accumulated in the atmosphere’s inversion layer causing them to discharge.” The sound of the northern lights has been released as an internet audio file⁴¹.

This inversion layer needs calm and steady conditions to appear, even slightest wind can change the conditions. The scientific explanation seems to match the indigenous observations where the northern lights appear during very cold and calm periods of weather.

4. Conclusions: Recent Starlore and Reflections

In this short discussion paper we have investigated the questions of indigenous, endemic starlore and celestial events. More specifically we have looked at Ursa Major and Polaris stars as iconic Arctic constellations as well as the northern lights, or *Aurora borealis*, which is prominent in all cultural traditional discourses of the North.

Materials have been derived from two long-lasting community-based oral history projects – Igloodik in Canada and Lower Kolyma, Siberia. The Inuit culture in Nunavut is linguistically related to the Lower Kolyma Chukchi, but that region is also home to the Yukaghir, Even and other indigenous peoples.

For the Inuit, Macdonald⁴² has worked with various Elders for over 40 years to discuss and document the celestial starlore. Such a systematic and rigorous, long-term commitment to the questions of ethno-astronomy have not been attempted often. The model was in use during the Snowchange oral history documentation in the Lower Kolyma, Siberia from 2005 onwards. This process is on-going. Surviving star lore in Siberia seems to be connected with the nomadic lifestyles of the reindeer herding communities – stars are used for navigation,

³⁹ Pyotr Serafimovich Agafonnikov Oral History Tape 2005

⁴⁰ www.sci-news.com/othersciences/geophysics/sounds-northern-lights-03980.html

⁴¹ Available at <https://youtu.be/NRZfKqhs6rM>

⁴² 2000, 2003

time keeping, prediction of weather, maintaining spiritual relations with the Cosmos and they also appear as a 'theatre' of unexpected events, such as the 'two moons' oral history by Pyotr Serafimovich Agafonnikov recounts.

This short article is by no means an exhaustive view on the questions of indigenous star lore. Rather it is the first step from the communities and Snowchange Oral History archives to start the discussion on the endemic notions of the universe and celestial bodies along with that.

What can be deducted from the materials presented here? Macdonald⁴³ points, with the case of the Ursa Major, that there is an intergenerational difference, whether the constellation is understood as 'many' or a 'single' caribou. Questions of Polaris or the pole star recount the position it holds as a world pillar, a central pole and a fixed navigational position. Some Elders such as Kristofor Nikolayevich Tretyakov in Kolyma make the distinction that it is 'almost' in the middle of the sky – pointing to very clear spatial dimensions of the celestial realms. The northern lights appear in many forms, predicting weather and being linked with the realms of the dead. Interestingly, some of the Elders from Kolyma have very strict endemic rules of how to be with them. Lastly, the scientific discovery of the sounds of the northern lights confirms what the Elders have known for millennia.

What about the Arctic skies of this century? Many forces appear to influence the astronomical knowledge of northern communities. Light pollution clouds the possibility to see all of the night sky, even in the smaller communities. Nomadic lifestyles are under threat as many of the younger people move away from the northern Siberian communities. The uses of stars for navigation and for maintaining relations with the Cosmos may be jeopardized by these events. Satellites, nighttime airplanes and other modern phenomenon crowd these new skies, while the 'endemic Cosmos' still is there, amidst all the noise of a global world.

Victoria Hykes-Steere, researcher and one of the cultural leaders of the Alaska Inupiaq peoples, originally from the community of Unalakleet has utilized the star lore and celestial traditions of her people into new forms of story telling, in a video titled "*We Used to Sing: An Elegy*"⁴⁴. The depth and the wisdom in this film animation recounts the essential truths about the Arctic skies better than a hundred books. Arctic, endemic star lore may still have a role to play, after all.

⁴³ 2003

⁴⁴ Available at https://www.youtube.com/watch?v=vJ3_SOT3a9Q



An Inuksuit from Igloolik. John Macdonald, 2002.

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