Each Star Has a Story: An Ethnographic Study of Indigenous Astronomical Knowledge in the Pacific Northwest, ca. 1900

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Abstract: The earliest accounts of Indigenous cultures in the Pacific Northwest gathered by anthropologists in the late 19th century contain detailed descriptions of celestial bodies. This article will examine the accounts of astronomical knowledge present in these sources focusing on the Nlaka'pamux (Thompson), Secwépemc (Shuswap), and T'it'q'et (Lillooet) people of central British Columbia, as well as the Kwakwaka'wakw (Kwakiutl), Nuxalkmc (*Bella Coola), and Haida from the Northwest coast.*

The Jesup North Pacific Expedition conducted between 1897 and 1902 produced detailed ethnographic accounts of Indigenous cultures in the Pacific Northwest. Their findings indicate that some cultural groups maintained a rich and diverse level of astronomical knowledge at the time of their collection in the late nineteenth and early twentieth centuries. This paper utilizes such ethnographic sources to better understand the depth and diversity of astronomical knowledge in the Pacific Northwest. Together, these ethnographic collections suggest that astronomical knowledge was an important, if distinctive, element of Indigenous societies as a cultural referent for oral traditions, including narratives explaining the origin and appearance of the night sky, complex calendar systems, and detailed observations of the stars themselves. The issue remains that even including ethnographic collections the historical record lacks indigenous voice during this period. However, the level of detail collected on stars, and on individual objects, suggests a wealth of information that was not gathered during the Jesup Expedition.

It is important to note that there are serious concerns with using ethnographic accounts to determine Indigenous knowledge. This evidence, while a unique source, is a product of its time. The material they contain can be valuable and highly insightful, especially when directed at specific research questions. However, they are highly editorialized, and their creation was subject to the false assumption that cultures were disappearing from the Pacific Northwest.[1] Yet, as the earliest available recorded sources on the topic these provide important information for an understanding of Indigenous astronomical knowledge.

The contact and post-contact era was characterized by an exchange of cultural and intellectual ideas between the Indigenous inhabitants of British Columbia and Europeans. This paper will reflect on the problematic nature of recovering, applying, and interpreting Indigenous astronomical knowledge circa 1900, utilizing the theoretical frameworks of Julie Cruikshank, Eduardo De Castro, and Lynn Abrams.[2] Existing studies of Indigenous astronomical knowledge in British Columbia are of limited scope and extent. Since few traditional historical sources address astronomical knowledge, this paper will rely solely upon ethnographic collections on the Nlaka'pamux, Secwépemc, and

[1] This assumption was in part tied to a colonialist search for 'authenticity,' as the idea that cultures were disappearing created the need for ethnographers to rapidly record their findings. In his introduction to *Forked Tongues* historian David Murray described this process as "textualising the Indians out of existence." Paige Raibmon provides further context in *Authentic Indians* observing that anthropologists were "[m]otivated to preserve what they believed were remnants of dying Indian cultures" attempting to "document old ways uncontaminated by White influence;" David Murray, *Forked Tongues: Speech, Writing and Representation in North American Indian Texts* (Indiana University Press, 1991), 3; Paige Raibmon, *Authentic Indians: Episodes of Encounter from the Late-Nineteenth-Century Northwest Coast* (Durham and London: Duke University Press, 2005), 5.

[2] Lynn Abrams, "Subjectivity and Intersubjectivity," in *Oral History Reader*, (Routledge, 2010), 54-77; Julie Curikshank, *Do Glaciers Listen?: Local Knowledge, Colonial Encounters, & Social Imagination,* (Vancouver: UBC Press, 2005); Eduardo Viveiros De Castro, "Cosmological Deixis and Amerindian Perspectivism," in *Journal of the Royal Anthropolopological Institute* 4, no. 3 (1998), 470.

T'it'q'et peoples of central British Columbia, as well as the Kwakwaka'wakw, Nuxalkmc, and Haida from the Northwest coast, and, where possible, Indigenous oral traditions contained within these collections. A comparative study of these Interior and Coastal First Nations circa 1900 will engage differences and similarities in the forms of knowledge held by each group to examine how astronomical knowledge is represented by evidence collected during the Jesup Expedition.

The Euro-Canadian ethnographies created in the late nineteenth and early twentieth century for the Jesup Expedition represent one of the few sources of oral accounts from this period that historians can use to study the astronomical knowledge of Indigenous cultures in the Pacific Northwest.[3] These are significantly flawed sources, as their creation was grounded in the assumption that anthropologists could create authoritative account

[3] For the purposes of this article these ethnographies have been divided between James Alexander Teit's work on the Interior Plateau and the work of Franz Boas and John Swanton on the Pacific Coast; James Alexander Teit, "The Thompson Indians of British Columbia," in *The Jesup North Pacific Expedition,* edited by Franz Boas (New York: 1900); James Alexander Teit, "Mythology of the Thompson Indians," in *The Jesup North Pacific Expedition*, edited by Franz Boas, (New York: Leiden E.J. Brill Ltd Printers and Publishers, 1912); James Alexander Teit, "Traditions of the Thompson River Indians of British Columbia," in *The Jesup North Pacific Expedition*, edited by Franz Boas, (New York: Houghton Mifflin & co., 1898); James Alexander Teit, "The Shuswap," in *The Jesup North Pacific Expedition*, edited by Franz Boas, (New York: Leiden & Brill Ltd., 1909); James Alexander Teit, "The Lillooet Indians," in *The Jesup North Pacific Expedition e*dited by Franz Boas, (New York: Leiden & Brill Ltd., 1906); John Swanton, "The Haida of Queen Charlotte Islands by John R. Swanton," in *The Jesup North Pacific Exepedition*, Vol. VIII, edited by Franz Boas, (New York: Leiden and Brill Publishers, 1905); John R. Swanton, "Haida Texts – Masset Dialect," in *The Jesup North Pacific Expedition,* Vol X, Part II, edited by Franz Boas (New York: Leiden and Brill Publishers 1908); Franz Boas and George Hunt, "Kwakiutl Texts," *Publications of the Jesup North Pacific Expedition*, Vol 5. Part I (January 1902); Franz Boas and George Hunt, "Kwakiutl Texts - Second Series," *Publications of the Jesup North Pacific Expedition*, Vol. 10, (Leiden and Bill Publishers, 1906); Franz Boas, "The Kwakiutl of Vancouver Island," *Publications of the Jesup North Pacific Expedition*, Vol 5. Part II (Leiden and Brill Publishers, 1909); Franz Boas, "The Mythology of the Bella Coola Indians," *The Jesup North Pacific Expedition*, Volume 2, Part 1 (November 1898).

of these 'dying' cultures. While these ethnographies were intended to record or 'save' important cultural elements of various groups, they are highly biased accounts that present a monolithic view of these dynamic cultures. Ethnographies must then be used with the appropriate scrutiny. Situating the Jesup ethnographic accounts utilized in this study, and ethnographic collections in general, in their historical context is important as they claim the authority to describe cultures without acknowledging external influences. In the case of British Columbia, these accounts ignore the post-contact concerns of trade, settlement, and industrialization in the Pacific Northwest experienced during the time of their collection. The interests of individual ethnographers heavily influenced the construction of these cultural accounts and the representation of this knowledge. However, James Alexander Teit's ethnographic work, especially his accounts on the Nlaka'pamux of the Thompson River valley, provides informative, if fragmented, documentation of Indigenous astronomical traditions in British Columbia's interior plateau region.

One of the main challenges in utilizing ethnographical accounts to determine specifics of cultural knowledge involves gauging how much the interviewer understood the topic in question, and the complex subjectivities involved in the interview process. Abram's discussion of intersubjectivity and Cruikshank's experiences with oral tradition underscore the fluid nature of oral history, suggesting the possibility that a rich astronomical discourse is present in these ethnographies independent of the ethnographer's knowledge of astronomy.[4] This conviction provides a theoretical basis for the analysis of the cultural importance of astronomical knowledge in this study. However, the assumption must be carefully situated, as it treats edited ethnographies as if they were raw oral interviews. Ethnographies, in effect, act simultaneously as primary and secondary sources due to their presentation of oral traditions within a written structure. They contain the representation of a cultural framework that can be used to understand elements of an indigenous society, but have

[4] Abrams, "Subjectivity and Intersubjectivity," 54-77; Curikshank, *Do Glaciers Listen?*.

been processed by Western professionals. A post-colonial approach calls the role of these editors into question. It may be possible to faithfully depict the cultures represented in an ethnographic or ethnohistorical work as displayed in Cruikshank's publications, but depending on the motivations of the editors this outsider perspective can become problematic.[5]

The theoretical model used in this paper to approach the cultural importance of both literal and figurative celestial figures within the ethnographic record is based on Julie Cruikshank's *Do Glaciers Listen?* Cruikshank incorporates oral and scientific narratives in her approach to the study of the significance of glaciers to the Tlingit and Athapaskan populations of the Alaskan Panhandle. This study is rooted in the ideas of Traditional Ecological Knowledge (TEK) and involves an intersection of culture and climate as glaciers are revealed as sentient bodies within Indigenous oral histories.[6] Cruikshank examines the way glaciers appear in both Indigenous and European memory, situating First Nations conceptions of glaciers as sentient entities, within Western understandings of geophysics. Adapting this approach has informed my attempts to engage astronomical knowledge from a Western perspective. Cruikshank's description of glaciers as cultural actors allows for the examination of astronomical (and traditional) forms of knowledge from a nuanced perspective regarding Indigenous conceptions of the natural world. Following this example, I aim to engage astronomical knowledge as a simultaneously static and fluid entity, operating on numerous cultural and practical levels for Indigenous groups on the Interior Plateau and Pacific Coast.

Stars are an interesting starting point from which to examine the discourse surrounding Indigenous astronomical knowledge present in the Jesup collections. Individual stars, while informative from current scientific perspectives, did not have the

[5] See Edward Curtis on the context of ethnographic photography in British Columbia. Curtis engaged himself in a form of cultural reconstruction, attempting to preserve a Western image of the Indigenous populations of British Columbia.

[6] Cruikshank, *Do Glaciers Listen?*, 10-12.

Sun or the Moon's daily influence on society. Their presence within the ethnographic record suggests deeper narratives of cultural power and knowledge associated with the study of the sky. As a case study on the importance of astronomy in Indigenous societies, we can turn to Teit's description of star lore found in his ethnographies on the Nlaka'pamux. Teit noted that the Nlaka'pamux made reference to specific stars, and the descriptions of stars and constellations took on a narrative form.[7] The narrator of these stories injected both power and authority through signifiers utilized in these tellings, empowering astronomical knowledge on a cultural level. Though various Western European traditions utilized narrative or folklore to describe celestial bodies, they did not contain the concept of natural agency discussed later in this article. This cultural discourse forms an epistemic barrier for both ethnographers and modern historians that foils attempts to contextualize the complexity of these relationships. These ethnographic accounts indicate a dynamic association, bound by cultural and linguistic ties that are beyond scientific description.

Teit identifies the stars as "transformed people."[8] The meanings of this are potentially vast, suggesting that stars, like humans, maintained voice within Nlaka'pamux society.[9] Anthropologist Eduardo De Castro has identified similar cultural constructions in the Amerindian populations of the Amazon as a form of perspectivism that introduces animistic beliefs to create "a spiritual unity and a corporeal diversity."[10] Perspectivism suggests

[7] Numerous examples of this will be provided in the following work drawn from Teit's contributions to the *Jesup North Pacific Expedition*.

[8] Teit, "The Thompson Indians of British Columbia," 341.

[9] My use of voice here is to reference the importance of stars and other natural features as signifiers within an oral culture. To imagine stars as transformed people suggests a level of authority and agency that are not present in Western conceptualizations of nature circa 1900.

[10] Animism and De Castro's position of Perspectivism are being used in a very narrow sense for this paper. Animistic approaches were not isolated to celestial bodies, and were often applied to animals, natural features (see Cruikshank: *Do Glaciers Listen*) and objects. I focus on what I interpret as animistic practices

that while there are notable differences between animals and humans, each had a common origin of "undifferentiation" that allows for communication between these figures.[11] De Castro situates shared humanity as an inverse of Western evolutionary perspectives. Western discourse claims that humans have progressed to separate themselves from the natural world; the commonality between humans and animals lies in their shared animalistic origins.[12] For the Indigenous cultures studied by De Castro, the common connection between animals and humans was instead their common origin of humanity: "animals are humans, not humans ex-animals."[13] On a cultural level, this epistemological system allows for the possibility that animals, and stars, may retain their voices and accompanying narratives within Indigenous societies through the construction of this common past. My examination of early ethnography from the Pacific Northwest circa 1900 will utilize this perspective as a tool to engage with the concept of astronomy as a form of cultural expression. A human origin of celestial bodies is consistent with animistic traditions maintained in the Pacific Northwest, as it introduces a dynamic and interactive world that suggests a continued discourse between humans and the natural world within oral Indigenous cultures.[14] James Teit's collections from the Nlaka'pamux on the interior plateau of British Columbia reveal this world.

The oral narratives Teit recorded accentuate the duality of the Nlaka'pamux observational and cultural relationship with the sky. The first example from the story of "the Four Black Bears," a Nlaka'pamux transformer tale, consists of two descriptions of the

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applied to the sky, but this is not exhaustive; De Castro, "Cosmological Deixis and Amerindian Perspectivism," 470.

[11] De Castro, "Cosmological Deixis and Amerindian Perspectivism," 471.

[12] Ibid., 472.

[13] Ibid.

[14] This is a very general statement, and it may only have a situational application for Indigenous cultures in the Pacific Northwest, however, for some of the groups discussed in this paper namely the Nlaka'pamux I feel that it provides a valid if incomplete framework for understanding their relationship to the sky.

four stars or 'brothers' that form the handle of the 'Grisly Bear.'[15] The figures of the story provide a larger narrative on seasonal change, and hunting practice for the Nlaka'pamux. Following De Castro's model of perspectivism humanity is a beginning in this story, as the hunters were the offspring of a human hunter and their mother, Black Bear.[16] In an act of jealous rage Grisly Bear killed both the hunter and Black Bear, earning the hate of Black Bear's children.[17] This story includes detailed descriptions of each hunter in the constellation, who like their mother took the form of a black bear.[18] The first was a fast hunter closely on the heels of the Great Bear, while the second hunter had a dog as a companion,[19] and the

[15] The constellation Ursa Major, known in Western Society as 'The Great Bear,' (and other names) incorporates the Big Dipper as the tail or hindquarters; Teit, "Mythology of the Thompson Indians," 218-224.
[16] Ibid., 218-19.
[17] Ibid.
[18] I am using the terms 'story,' 'narrative,' or 'description' in place of 'mythology,' 'legend' or 'folktale/lore' as the latter place these oral histories at a position of disadvantage or skepticism. My use of the term 'story' is not dismissive of the power these accounts hold, it is merely a convenient way of expressing their form of communication; Teit, "Mythology of the Thompson Indians," 224.
[19] As an illustrative measure this story can be categorized with contemporary understandings of the night sky, though the merits of this are suspect. This example should illuminate the distinct epistemological approaches that divide Western and Indigenous perceptions of the sky. In the story of the hunters, the hunter with a dog can be identified as the star Mizar, the second star in the handle of the Big Dipper, while the dog is Alcor. This can be deduced by the companionship of the pair in the narrative, as Mizar and Alcor form a visual binary (stellar pair). Moving beyond visual observation with the aid of scientific observation Mizar and Alcor are revealed as a complex multi-star systems, with the star Mizar consisting of four stars (a pair that each have a companion), while Alcor can be separated into two stars, resulting in a six-star system. Historically, the ability to separate the visible binary of Mizar and Alcor has been used as a vision test in many cultures. I include this complex description to highlight the distinction, and limits on how Western perspectives perceive astronomical knowledge in contrast to the Indigenous narrative of seasonal change and cultural practice that I have highlighted in the text. The stars are the same, but the *cultural importance* of those stars and their meaning is different. In simple terms, there is a distinction between learning *about* the stars and learning *from* them.

third trailed behind, held back by fear.[20] The close observation required to separate the second 'hunter' from the dog, highlights the acumen of the Nlaka'pamux in their studies of the night sky, as these stars are difficult to split with the unaided eye. It is important to situate this observational capacity, as it was not directed toward a Westernized cataloging of the sky for organizational purposes. The excerpts collected by Teit contain elaborate descriptions of the sky, indicating that selected oral traditions required both an observational and cultural awareness of structures in the night sky.

The story of the hunters incorporated cultural lessons that were reinforced by the stars. Perspectivism suggests the human origin of celestial bodies allows stars to function as cultural referents, providing an epistemological basis for knowledge to transfer between the stars and human tellers. The transformer tale of the "Four Black Bears," or "*Qwa'qtqwal* brothers" incorporates themes that include conflict between grizzly and black bears, familial responsibility, and the duties of husband and wife into the origin story of the constellation.[21] The conclusion of this narrative is worthy of note, as it suggests the eternal character of the stars themselves as signifiers for the Nlaka'pamux's oral traditions:

> We will be seen by *all* future generations, who will *tell our story* [emphasis added],' Hence the one Grisly Bear, followed by three Black Bear hunters and the dog, in the group of stars called 'Grisly Bear.'[22]

The oral narrative of the hunters is then reinforcing the cultural referent of the 'Grisly Bear,' while being simultaneously strengthened by the unchanging structure of the sky across generations.

The origin of stars as living individuals is important to the way the Nlaka'pamux explained the organization of the heavens.

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[20] Teit, "The Thompson Indians of British Columbia," 342.
[21] Teit, "Mythology of the Thompson River Indians," 218-224.
[22] Ibid., 224.

As discussed, some Nlaka'pamux in the lower valley "believe the Dipper to be Transformers, the children of the Black Bear turned into stars," suggesting that the stories that accompanied the stars, or the stars themselves, retained agency within oral tradition.[23] This was not the only understanding, as a separate excerpt described the stars as "roots growing into the upper world."[24] Celestial bodies maintained fluid definitions, and remained separated from the corporeal world. However, they could impart a narrative across this barrier due to societal understanding of their origin as individuals.[25] This allowed celestial bodies to provide cultural instruction despite their separation from the 'world.' For example, in the story "Old-one and the Earth, Sun, and People," the Stars, Moon, Sun and Earth existed before the world had formed.[26] These beings had human relationships with each other, as 'Sun' and 'Earth' were married, but they separated due to 'Earth' finding 'Sun' "nasty, ugly, and too hot."[27] The Sun's relatives, 'Moon' and 'Stars,' left with him when they separated. These accounts suggest that celestial objects were *expected* to display human behavior.

Lessons grounded in human experience then informed understandings of the sky. However, the oral narratives based on the interaction of these celestial bodies could also inform human interactions. Following the departure of the 'Moon' and 'Stars' the Earth was sorrowful, so the 'Old-One' transformed them into the celestial bodies "plac[ing] them all so that they should look on the Earth-woman, and she could look at them."[28] The story goes on to describe the creation and population of the Earth, beginning with an ordering of the heavens. Due to its position at the head of this

[23] Teit, "The Thompson Indians of British Columbia," 341.
[24] Attributing one definitive answer to explain the nature of an object is a Westernized concept that would ignore some of the fluidity present in these early ethnographic accounts: Ibid.
[25] In this sense, the authority of celestial objects is a projection of the Nlaka'pamux cosmogony. Understanding the origin of the stars as people gives them voice that is revoked by 'scientific' interpretations of nature.
[26] Teit, "Mythology of the Thompson River Indians," 321.
[27] Ibid.
[28] Ibid, 321.

story the sky features as a prominent element of the narrative. It is thought that the sky once had human characteristics, which allows observers and tellers to relate to celestial bodies. Similarly, references to the Pleiades star cluster are an excellent example of using human experiences to describe celestial structures. For example, the Pleiades, called 'bunch' or 'cluster' by the Nlaka'pamux, were said to have formed after a crowded visit to 'Moon's' house.[29] This story explained the origin of their image on the sky through the application of accessible human experiences in the narrative.

The ethnographies Teit produced with the Nlaka'pamux contain other references to the stars through both specific description and narrative that can be used to draw parallels between Indigenous and Western knowledge. While references to these celestial objects are relatively infrequent, it should be noted that the presence of their organization suggests a broad ordering of astronomical knowledge on a cultural level, as individual stars are more difficult to observe than the Sun or Moon. The stars were identified into unique figures, with the structures similar to European constellations as we have noted from our discussion of Ursa Major.[30] These designations clearly came from observed patterns in the night sky, yet there is a possibility that the names of star groupings present in Teit's ethnographies were corruptions of European terminology introduced during the translation and editing process.[31] Yet Teit's collections indicate a deep system of observation and explanation in the Nlaka'pamux approaches to the sky. Individual and collective celestial bodies maintained their own narrative and meaning. This indicates both an organizational and cultural importance to the study of the sky. Each star and

[29] Teit, "Traditions of the Thompson River Indians of British Columbia," 91.
[30] Teit, "The Thompson Indians of British Columbia", 341.
[31] In Teit's translations (or perhaps Boas's editing) the celestial objects are referred to by European descriptions (The Big Dipper instead of the Grisly Bear etc.), with the Indigenous title featured in quotations, or brackets. An example of this is Venus being referred to as the "Morning Star" (a European title for Venus), while the Nlaka'pamux were unlikely to identify it this way.

constellation incorporated into this oral tradition had a story connected to it.

It is possible to produce recognizable images of the Cygnus and Orion constellations by breaking down Teit's brief descriptions in "The Thompson Indians of British Columbia."[32] They gave individual stars unique names such as 'Swan' followed by 'Canoe,' who was said to be filled with hunters chasing the larger pattern of the Swan.[33] Through the examination of modern star-charts, one can infer that "Canoe" is likely a reference to the star Deneb, which forms a part of the European constellation Cygnus the swan. Teit records state that 'Canoe' was filled with hunters chasing the star 'Swan' suggesting a narrative to accompany this formation not noted in his ethnographic account.[34] In this section, Teit provides detailed descriptions of named stars in the Nlaka'pamux figure of the Hunter:

> Still others are called 'women engaged in roasting roots,' 'fishermen fishing with hook and line,' 'weasel's tracks,' [and] 'arrows slung on body.' These are said to have been a hunter carrying his bows and arrows.[35]

When compared to star-charts, this passage describes the structures and features of the constellation Orion, also known as 'the hunter.'[36] The star 'women engaged in roasting roots,' suggests fire, and an affinity to the colour red. This appears to be a reference to Betelgeuse, a bright red giant star in Orion. The next star, 'fishermen with hook and line,' has a connection to water, and paired with the reference to 'the Hunter' is the blue giant star Rigel, also in the Orion constellation.[37] Another, 'Weasel's tracks'

[32] In doing this I am following the model provided by Cruikshank in addressing traditional ecological knowledge (TEK) in *Do Glaciers Listen* while contextualizing it in parallel to Western referents.
[33] Teit, "The Thompson Indians of British Columbia," 342.
[34] Ibid.
[35] Ibid.
[36] David M. F. Chapman, ed. *Observer's Handbook 2014* (Canada: Webcom Inc, 2013) 340-341.
[37] Betelgeuse forms the shoulder of Orion constellation, while Rigel is the left foot. They are both amongst the brightest stars in the sky; Ibid, 285.

suggests the pattern that form three stars that make up Orion's belt, while the 'Arrows slung on the body' represent the European image of Orion's sword.[38] The complete image of a 'hunter carrying his bows and arrows' replicates the contemporary image of Orion, as a band of stars surrounding his outstretched left hand appear to form a bow (or sometimes a shield). The observation, and stories attached to each star underscore a cultural connection to the night sky for the Nlaka'pamux worldview in Teit's collections. The names of the stars that form 'the Hunter' are stories *in their own right*.[39] Other individual stars maintained their own traditions and stories. The bright star that follows the Pleiades star cluster (Aldebaran) was known as "the dog following on their trail."[40] Teit, not focused on the collection of astronomical knowledge, only recorded the names of the brightest stars and alluded to three major constellations in his references. However, this does not detract from the likelihood that the Nlaka'pamux maintained a far richer understanding of the heavens beyond these prominent objects.

Descriptions of the stars continue to appear within the ethnographic record from other interior plateau First Nations groups Teit visited in the late nineteenth and early twentieth century. The Secwépemc and T'it'q'et provided Teit with stories about the sky within the broader cultural collections he gathered for Boas. These stories share similar elements encountered in the Nlaka'pamux tradition, namely the transitional nature of the sky as both cultural actors, and fixed objects. For example, the story "The Gambler's Son and the Star-Man" recounts a wandering boy encountering a star that became man upon falling to Earth. [41] The

[38] The middle "star" of Orion's sword is known as "The Great Nebula in Orion," and is the brightest nebula visible in the northern hemisphere. It appears as a hazy star, and the bright point of light is in fact a cluster of stars at the heart of the nebula known as the Trapezium. Teit's records do not indicate the Nlaka'pamux observed features of the nebula itself.

[39] This stylistic form of organizing the heavens is likely a product of the oral society maintained by the Nlaka'pamux at the turn of the century, as it is a notable departure from European naming schemes.

[40] Teit, "The Thompson Indians of British Columbia," 341.

[41] Teit, "The Shuswap," 726.

'Star-Man' accompanied the youth, taking many forms, including a horse, and helping him rebuild a lost family fortune before returning to the sky as a star.[42] This story differs from the Nlaka'pamux collections as the 'star' interacts with a human rather than other celestial bodies, but highlights the connection between the celestial and terrestrial world. The sequence of the narrative transitions from star, to human, to animal, and then reverses this order upon conclusion. The phases of this story are consistent with de Castro's perspectivism. In this account, the star-form at the beginning and end of the story suggests a position of authority through the immutability of the star as a referent. This story also describes 'falling stars,' highlighting the importance of celestial observation to the Secwépemc for it to be present in their oral tradition. Indeed, this reinforces that the Secwépemc did not view the celestial realm as a fixed entity unlike the Aristotelian traditions that endured until the sixteenth century. It is significant that the Secwépemc both observed, and saw importance in these events, as they are among the more dynamic (if brief) changes that can happen in the sky.

The Secwépemc ethnographies provide further details of celestial knowledge and cultural interaction on the interior plateau.[43] Teit notes that Secwépemc star names were very similar to those used by the Nlaka'pamux.[44] Their conception of the stars originating as humans is also comparable, if specific to the Secwépemc cultural beliefs. Here I will focus on an informative distinction between the two collections. An interesting addition included in Teit's ethnographies from the Secwépemc is the revelation that only some stars in the sky have names. The story of "The War with the Sky People" states that "those without names are believed to be members of a war-party of earthly people who

[42] Ibid., 726-7.

[43] Due to the nature of Jesup ethnographies as broad cultural collections, it is difficult to ascertain whether the variance between the recorded Indigenous traditions are exaggerated or minimized. It is important to note that despite both the Nlaka'pamux and Secwépemc being close neighbors, they maintain distinct cultural values and history.

[44] Teit, "The Shuswap," 597.

were slaughtered by the sky people and transformed into stars."[45] All of the evidence presented in this article has been used to infer a broader understanding and significance of astronomical knowledge within interior societies. This is the first statement that introduces cultural limits on that knowledge: only some stars were named. There is an explanation to the origins of these unnamed stars, creating a 'celestial hierarchy' not unlike the constellations commonly referenced in colonial societies in the late nineteenth and early twentieth century. Similarly, the full story of "The War with the Sky People" describes the attack on the heavens, and explains how the earth people that could not retreat were killed.[46] In effect, this represents the establishment of order from chaos that has similarities to Geek Cosmogonies again indicating an ordering of celestial knowledge.[47]

Teit also collected astronomical narratives from the T'it'q'et near present day Lillooet. The T'it'q'et described the heavenly bodies as transformed people, maintaining the animistic traditions visible on the Interior Plateau.[48] Like the Nlaka'pamux, the T'it'q'et identified the Big Dipper as 'animal' or 'grisly bear [*sic*]' with the handle representing hunters in pursuit. The Pleiades were also noted, as were larger stellar groupings or constellations.[49] The T'it'q'et identified a star they called 'middle of the earth' that did not change its position in the sky.[50] This reference is significant as it confirms that the Lillooet also named stars. Furthermore, the T'it'q'et star 'middle of the earth' is likely the same one used for navigation in many cultures in the northern hemisphere, also known as Polaris, or the 'North Star.'[51] T'it'q'et

[45] Ibid., 597.
[46] Ibid., 749.
[47] An interesting distinction between this story and the Greek Cosmogonies, is that this appears to have been a voluntary attack by the 'earth people,' as the story does not describe the 'Sky-people' as being unjust. The 'ordering' is slightly nuanced, as it transitions from order, to chaos, to order.
[48] Teit, "The Lillooet Indians," 275.
[49] Ibid.
[50] Ibid.
[51] Like the star 'middle of the earth' the position of Polaris on the night sky does not appear to change, as it is located near the northern axis of the Earth.

tattooing practices often featured celestial bodies, including the Pleiades and other stars featured alongside Sun and Moon.[52] The celestial features the T'it'q'et described to Teit were once men with the appearance of the stars, and phenomena like eclipses or rainbows, being attributed to the actions of these once human figures.[53] By adopting an animistic paradigm we can understand how the human actions attributed to these bodies by T'it'q'et observers explained changes in the night sky.

There was a distinct link between the sky and daily activities on the interior plateau. The Nlaka'pamux maintained a detailed lunar calendar, using the sky to keep time. Important events and dates were then reliant upon this knowledge, forming a firm connection between spatial and astronomical awareness.[54] The Nlaka'pamux used a Lunar calendar similar in function to that of European society, maintaining individual names for many of the moons, or months in the Western tradition.[55] In the Spence's Bridge area, the first moon, *Tcuktcukt*, occurred in November, signaling a final hunt before winter.[56] The second moon, *N'ulxtin*, "going in time," rose as Fall shifted to Winter, and the Nlaka'pamux retreated to their winter dwellings.[57] During the third moon, bucks shed their antlers, and during the fourth, *PEsqa'pts*, "spring [winds] time" occurred as the season shifted to spring.[58] The fifth moon, *Nxu'itin*, signified the growth of plants, and the full arrival of spring, while the sixth ushered in the fishing season.[59] The ninth moon, *Texwauzsi'kentin*, or "middle time"

[52] Teit, "The Lillooet Indians," 298-99.
[53] Ibid., 275.
[54] In many ways this echoes Western societies, who also organized seasonal shifts on the Lunar calendar and solstices. Further, the primary method of determining time during the period these ethnographies were collected was through detailed observations of either Jupiter's moons, or the scheduled occultation of stars by the Moon; J. S. Plaskett, "The History of Astronomy in British Columbia," *Journal of the Royal Astronomical Society of Canada*, 77, no. 3 (1983): 108-120, 108-9.
[55] Teit, "The Thompson Indians of British Columbia," 238.
[56] Ibid.
[57] Ibid.
[58] Ibid.
[59] Ibid.

contains the summer solstice, another celestial marker in the calendar, and marked the ripening of berries, as well as the first hunts.[60] The tenth moon, *Laxa'ks*, accompanied the first salmon runs, while the following moon "[t]he next moon," *kekaitka'in*, indicated the silver salmon run, and the end of the fishing season.[61] The following months were termed *Lwa'istin,* "the rest of the year" or "fall time," when the Nlaka'pamux carried out their main hunting season.[62] Teit's collection shows that both subsistence and cultural activities were guided by the detailed observation of relationships between celestial activity and the surrounding world.

Residents of the lower Thompson valley maintained a similar calendar, with slight modifications to the names. The second moon was *N'ulx* (going in), the third moon was *Wawi't ta sn'ulx* (the last going in), the fourth moon was *Nxu'xuet* (little coming out), the fifth moon was *N'ulxwa'uas* (going in again), the sixth moon was *Nxu'it* (coming out), with the remaining moons maintaining similar naming and activity structures until the eleventh moon, *KokauxEmu's* 'to boil food a little' during which the Thompson prepared fish oil.[63] This calendar was structured around five seasons: winter, spring, summer, early autumn, and late fall.[64] The period of late fall allowed the Nlaka'pamux to conform their calendar to the solar cycle, as the lunar and solar cycles do not fully align.[65] The Secwépemc also utilized a lunar calendar following a similar organizational pattern.[66] The only major difference in the calendars of the two cultures is the

[60] Ibid.
[61] Ibid.
[62] Ibid.
[63] Ibid., 238-9.
[64] Ibid., 239.
[65] The European calendar prior to the alterations of Pope Gregory XIII's Gregorian Calendar, operated in a lunar cycle, with a solar year similar in principle to the Nlaka'pamux's design. Due to the moon cycle lasting 29.5 days, and the solar year containing 365 days, the occurrence of important dates began to shift over time. Days were added to the moon cycles in the Gregorian Calendar to account for this. The late fall of the Nlaka'pamux calendar performs a similar function.
[66] Teit, "The Shuswap," 518.

suggestion that the Secwépemc retreat to their dwellings earlier in the Fall, perhaps due to geographical reasons.[67] Like the Nlaka'pamux, the T'it'q'et also began their calendar in November. For the T'it'q'et, Teit's collections do not record the clear distinctions between the seasons utilized by the Nlaka'pamux. Despite the missing detail, he does note that the T'it'q'et employed a similar calendar of seasonal progression, reliant on celestial observation throughout the year.[68]

The lunar calendar maintained by the Nlaka'pamux marked different societal events. Daily activities operated in accordance with the skies and in conjunction with indicators of seasonal shifts. Likely, these included religious ceremonies and cultural events. Therefore, developed celestial knowledge was probably important not only to the subsistence lifestyle of the Nlaka'pamux, but also to the religious, and historical facets of society. Teit's description of the Nlaka'pamux Lunar calendar occurs immediately prior to his discussion of cultural hunting practices. This proximity suggests that observations of the heavens were important for traditional hunters. As the following section will discuss, observations of the sky provided hunters with navigational aids, and an awareness of the availability of game. This trend is repeated in Teit's works "the Shuswap"[69] and "the Lillooet."[70] he states "Hunting, trapping, and snaring of game was one of the most important occupations of the Thompson Indians."[71] Despite this he introduces the method of tracking the seasons before this, suggesting a distinct link between celestial knowledge, and subsistence practice.[72] The link between astronomy and hunting can be seen in artwork attributed to a Nlaka'pamux puberty ceremony. These figures featured in Teit's "The Thompson Indians of British Columbia," include an apron

[67] Ibid.
[68] Teit, "The Lillooet," 224.
[69] Teit, "The Shuswap," 519.
[70] Teit, "The Lillooet," 224.
[71] Teit, "The Thompson Indians of British Columbia," 239.
[72] Ibid., 237-9.

worn during a puberty ceremony, and a drum. [73] The apron and drum skin feature both animals, and celestial objects prominently, suggesting that hunters maintained a relationship with both the animals they killed, the celestial objects that guided them.[74] Teit noted that the "two moons and six stars painted around [the hunter] suggest his nightly travels," referring to the key navigation points the sky provides at night.

The Pleiades, a famous star cluster, feature prominently in Teit's descriptions of Nlaka'pamux astronomy. A story depicting a visit to Moon's house and a Coyote story collected by Teit both affirm them as a cultural landmark, emphasizing the importance of their continuity in the night sky. These stories contain detailed descriptions and explanations for the appearance of the natural world. In the Nlaka'pamux story "The Moon and His Younger Sister," the Moon invited all of his friends amongst the stars to his house, yet only the Pleiades came.[75] The members of the Pleiades were numerous. As the small house was crowded, the Moon allowed his younger sister to sit upon his face, forever dimming his appearance. This story explained why the Pleiades appeared as a cluster in the night sky: the small size of Moon's dwelling pressed the members of the Pleiades together, shaping them into a tightly knit group of stars. This account also explains the molted nature of the Moon's surface as some Nlaka'pamux oral traditions suggest the Moon was originally brighter than the Sun prior to this gathering.[76] There is a feedback between the stories explaining the function and appearance of the natural world, and celestial bodies acting as referents for the oral traditions of the Nlaka'pamux.

Like the Moon, the Pleiades functioned both as practical and cultural references, denoting the complex relationship the Nlaka'pamux maintained with the natural world. The importance of the Pleiades to Nlaka'pamux society goes beyond the observation and explanation of the celestial features, as Teit recorded they "used to tell the time of night by [the Pleiades],

[73] Ibid, 380.
[74] Ibid.
[75] Teit, "Traditions of the Thompson River Indians," 91.
[76] Ibid, 92.

reckoning by their position in the sky."[77] Like the Moon and Sun, the Pleiades were an important timekeeping device. Indigenous cultures located outside the Pacific Northwest found similar uses for the cluster. Gregory Cajete, of the University of New Mexico, illustrates the importance of the Pleiades to the Navajo people of New Mexico in his book *Native Science: Natural Laws of Interdependence*. Cajete explains that the Navajo, like the Nlaka'pamux, maintained a developed relationship with the skies, and within this the Pleiades had an important role. The Pleiades, called the "Planter" were an indicator of the Navajo agricultural seasons, dictating when planting was to start by their disappearance from the spring sky.[78] Observation of the positions of the night sky were important, and bright, identifiable celestial objects such as the Pleiades aided this by creating seasonal reference points that remained constant over time.

The three Indigenous groups from British Columbia's interior we have discussed maintained detailed descriptions of the stars, Sun, and Moon when Teit collected stories for the Jesup Expedition.[79] This article posits that the richness recorded in Teit's collections points towards the significance astronomical knowledge must have had in the cultures he observed. Yet, the question remains: was astronomical knowledge equally important to cultures in other areas of British Columbia? Weather conditions vary on the Northwest Coast, and it is possible that the sophisticated observations displayed by the Nlaka'pamux, Secwépemc and T'it'q'et stemmed from environmental conditions that provided clear skies more frequently.

To expand the discussion beyond the works of Teit, I will shift from the Interior Plateau of British Columbia to the island populations of the Norwest Coast. In order to do so I will draw upon John Swanton's collections on the Haida published in 1905

[77] Ibid., 341.
[78] Gregory Cajete, *Native Science: Natural Laws Interdependence*, (Sante Fe New Mexico: Clearlight Publishers, 2000), 224.
[79] Though I have not engaged with the topic of the Sun choosing to focus on the night sky, it was a similarly prominent celestial body in these ethnographic collections.

and 1908, and Franz Boas's work on the Kwakwaka'wakw and Nuxalkmc circa 1900. The content of Swanton's accounts differed from Teit's collections, as Swanton encountered distinct perspectives on the night sky. Life on the islands of Haida Gwaii differed from that of the interior plateau.[80] Rain and cloud-cover are markedly higher on the Pacific Coast and one can assume this contributed to relative importance of astronomical knowledge within Indigenous societies. It is also important to acknowledge the cultural differences that were present between Interior and Coastal First Nations, as the projection of cultural values into the narratives surrounding the sky would reflect shifting perspectives. Given these differences, and acknowledging the skill displayed in Teit's ethnographies, it is surprising that John Swanton collected such detailed astronomical accounts from the Haida.

Like the interior Indigenous groups, Swanton's collections from the Haida contained direct references to stars. In direct contrast to Teit's ethnographic records, one of the first statements Swanton makes about the stars is that they are considered to be 'inanimate' objects within Haida 'legends.'[81] His description featured short narratives explaining the visual appearance of the Moon, but relegated the stars to a less significant position. This account elevates the status of the Moon over the Sun, and claims that these two celestial bodies were "inhabited by a supernatural being who sometimes spoke through shamans."[82] His record still allows for celestial voices, however, it is very different from the Plateau discourse surrounding the cultural importance of the sky. Despite Swanton's observation that "the Sun occupies a markedly unimportant position" in the Raven story shamans were respected members of society, suggesting a power association between their societal standing and the Sun and Moon.[83] Swanton even noted the

[80] I will refer to the collective knowledge of the Nlaka'pamux, Secwépemc and T'it'q'et as 'Interior' knowledge during my discussions of the Haida for simplicity in comparing geographical regions. While I generalize, it is not a homogenous form of knowledge, and should not be interpreted that way.
[81] Swanton, "The Haida of Queen Charlotte Islands by John R. Swanton," 14.
[82] Ibid.
[83] Ibid.

Moon 'belonging' to the Raven Clan, further tying celestial objects were to the hierarchical functions of Haida society.[84]

While celestial objects and astronomical knowledge were not granted the level of engaged importance present in the Interior manuscripts, it is possible this failing results from Swanton's approach toward ethnographic collection. Stars within Haida society do appear as participants of the cultural power dynamics, however they lack the agency suggested in Interior accounts. While they are not given individual voices in Swanton's collections, stars perform as elements of cultural memory that help to situate both history, and status. For example, the clothing of the Cod-People incorporated astronomical motifs to honor the memory of a former chief:

> The Cod-People wore stars in memory of Ski'laowe, their first chief. He had his house filled with holes; so that, when the light shone through, it looked from the outside as if covered with stars.[85]

The stars are a cultural referent and symbol for Ski'laowe's respected standing. Oral tradition present in the passage also implies a form of cultural importance for the stars, as Ski'laowe chose to utilize them as a symbol. While the stars may not have their own voice within Haida society when Swanton collected his accounts, they had been incorporated into the oral traditions he collected, fulfilling an important cultural function. The 'Star-house' or Ka'-i1ana'as[86] created by Ski'laowe appears numerous times in Swanton's ethnographies, inferring an important social status for the building and that the construction of 'Star-House' was an important feature for some of the historical narratives he recorded.[87]

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[84] Ibid.
[85] Ibid, 111.
[86] Ibid, 290.
[87] Swanton, "Haida Texts – Masset Dialect," 748-9.

The most complete accounts involving stars and celestial bodies collected by Swanton take the form of *Raven* stories. As with any form of oral tradition, there is some regional variance based on the setting and the teller. In Swanton's collections, an explanation of how the stars were created is found in a *Raven* story gathered in Masset. *Raven* traveled to the 'sky-country' and created the Sun, Moon, and stars out of 'Moon' before placing them in the sky.[88] *Raven*'s choice to place stars in the sky involved an exchange of goods, further establishing that the function of stars for the Haida in this story differs greatly from the Interior traditions discussed earlier.[89] The stars are depicted as a form of currency, rather than active beings. A second *Raven* story recorded by Swanton also featured the celestial bodies being fashioned from the moon. This account did not feature the exchange of goods, but *Raven* still carried out the transformative acts of the first story, beginning with the Moon as the origin of celestial bodies.[90] Swanton includes an expanded version of this story that describes *Raven* playing with the 'Moon' in a time of darkness.[91] *Raven* traveled to the Nass River, and offered to exchange light for eulachon.[92] *Raven* threw the 'moon' from a high mountain breaking it in two:

> He threw half of it up, and said, 'You shall be the moon. Your face shall give light in the night.' And he threw the other half of it, and said, 'You shall shine in the middle of the day.' Then he threw up the pieces, and said, 'You shall be the stars. When it is clear, they shall see you all during the night.'[93]

This story once again features forms of bartering, linking celestial bodies to trade relationships. In a notable departure from Interior

[88] Swanton, "The Haida," 209.
[89] Ibid.
[90] Ibid, 74.
[91] Swanton, "Masset Dialect," 310.
[92] Ibid, 311.
[93] Ibid.

origin accounts that feature the celestial bodies as transformed humans, the celestial bodies in this account are all formed from a single inanimate object. Nevertheless, these variations provide insight into both Haida culture, and the focus of Swanton in his ethnographic collection. It suggests that the skies are valued primarily for the production of light, alluding to their value as navigational aids for Haida mariners. The phrase 'when it is clear' is important to note, as this alludes to a difference between the observational platforms of the Coast and the Interior, potentially explaining the disparity in focus on celestial bodies between the two regions.

Accounts involving the Moon continue to surface in Swanton's works. The story of "The Woman in the Moon" is the only narrative collected by Swanton that displays the stars as sentient actors in a fashion reminiscent of Teit's collections.[94] The narrative describes how a woman came to rest on the face of the moon, and the role of stars as active pursuers in this process. The woman points at a star, and is pulled into the sky.[95] As her brothers rescued the woman from the sky, the stars followed in pursuit.[96] The stars in this story do not have the individual names and explanations present in Teit's Interior ethnographies. It is possible that this level of detail was not present in Haida oral narratives, or that Swanton's ethnographic collections were not as sensitive to nuanced information on this topic as it was relayed by Haida informants.[97] Yet, Swanton's stories on *Raven* and 'Star-House' provide a basis to evaluate the importance of celestial bodies on a cultural level.

It is difficult to evaluate the cultural importance of astronomical knowledge through ethnography, as there is considerable variance between the records of different ethnographers. The absence of references to the stars or other

[94] Ibid, 450-51.
[95] Ibid, 450.
[96] Ibid, 451.
[97] This is not to say that the Haida oral histories did not contain the same level of detail, just that the importance of the stars may have shifted toward other natural features due to the Haida's proximity to the Pacific Ocean.

celestial bodies is as likely to be a failing of the ethnographer, as a commentary on an Indigenous group. To examine this further this paper will now turn to Franz Boas's collections from the Kwakwaka'wakw of northern Vancouver Island and Nuxalkmc of Alert Bay. The ethnographies produced on the Kwakwaka'wakw stand in stark contrast to the collections of Swanton and Teit, as there is not a single mention of 'star' or 'stars' in the texts.[98] Looking past the stars, Boas makes a total of three references to the Moon in these accounts.[99] In contrast, Swanton makes three references to the Moon in the table of contents for his ethnography on the Masset Dialect and at least seven in the text.[100] This emphasizes the importance of the ethnographer in the collection of cultural records, as Boas failed on three occasions to incorporate celestial narratives into his depictions of the Kwakwaka'wakw. Boas does make one reference to the stars in his study of the Nuxalkmc, however, it is limited to a brief description and image of a mask used to depict patterns on the deities Aimald'ftEla and Ai'umki'lik-a.[101] Boas makes numerous (eight) references to the Moon, however, his accounts are still very limited in comparison to Swanton and Teit.[102] While the ethnographic records lack the detail of Teit's recordings from the Interior plateau, Swanton's collections from Haida Gwaii and, to a very limited extent, Boas's work with the Nuxalkmc allow for the conclusion that coastal Indigenous populations maintained keen observations of the sky that accompanied their oral narratives that described celestial bodies. These narratives suggest that the celestial bodies were still culturally significant, if poorly recorded.

Shifting focus back to the Interior, the examination of a Nlaka'pamux contact narrative will conclude this investigation of

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[98] Boas and Hunt, "Kwakiutl Texts;" Boas and Hunt, "Kwakiutl Texts - Second Series;" Boas, "The Kwakiutl of Vancouver Island.".
[99] Boas and Hunt "Kwakiutl Texts," 50, 182; Boas and Hunt "Kwakiutl Texts – Second Series," 167.
[100] Swanton, "Masset Dialect," VI, VII, VIII, 309, 311, 417, 450, 452, 754, 755.
[101] Boas, "The Mythology of the Bella Coola Indians."
[102] Ibid, 31, 33, 39.

celestial agency in the Northwest. In Wendy Wickwire's article "To See Ourselves as the Other's Other: Nlaka'pamux Contact Narratives," she investigates accounts of Simon Fraser's first meetings and contact narratives regarding the Indigenous population of the Thompson River valley.[103] Her article identifies a series of historical concerns over the collection and production of ethnographic accounts relevant to the study of Indigenous astronomical knowledge. Wickwire provides further contact narratives in support of the conclusion that the origin of celestial bodies as humans granted them agency within Nlaka'pamux society.[104] Wickwire uses five oral accounts of Fraser's passage through Lytton including 'mythological' accounts from Teit's ethnography. In each account, Fraser was identified as the 'Sun.'[105] In Teit's account, the canoe that held Fraser, or 'Sun,' was also filled with 'Moon' and 'Morning-Star.'[106] In effect the 'mythological' version of Fraser's visit posits that the outsiders were celestial bodies. This offers new insights into the influence of cultural beliefs on the events surrounding the Contact era and the relative importance of astronomical beliefs to the Nlaka'pamux that they were the first 'mythical' figures listed. It is possible that this was an isolated experience, however, it suggests deep cultural relationships with the sky that could have extended beyond the Nlaka'pamux. Furthermore, it informs how these relationships influenced the experience of Contact.

Indigenous cultures maintained advanced systems of knowledge relating to the stars and celestial mechanics that are not typically acknowledged in the historical record. Taken together, these ethnographic accounts indicate that Indigenous cultures in the Pacific Northwest maintained a rich and diverse level of astronomical knowledge at the time of their collection in the late nineteenth and early twentieth centuries. This research suggests

[103] Wendy C. Wickwire, "To See Ourselves as the Other's Other: Nlaka'pamux Contact Narratives." *The Canadian Historical Review* 75, no. 1 (March, 1994): 1-20.
[104] Ibid, 2-3, 8-10.
[105] Ibid, 12, 17.
[106] Ibid, 10-11; Teit, "Mythology of the Thompson River Indians," 416.

that astronomical knowledge was both present and important to Interior and Coastal communities. The conclusions that can be drawn are limited by imperfect sources as knowledge has often been obscured by the bias displayed in these early recordings. Yet the information that remains still conveys the understanding that the Indigenous groups maintained a detailed understanding of the night sky that was readily incorporated into oral tradition. The regional study suggests that Interior conceptions of the sky were more developed than those on the Coast; however, the identity and interests of the ethnographers in these collections cannot be ignored. While conclusions of astronomical knowledge in the Pacific Northwest are limited by the extent of this study, the ethnographic collections discussed suggest that it was an important element of Indigenous societies as a cultural referent for oral traditions. Rather than presenting concrete conclusions this preliminary study presents an opportunity for continued engagement and research with Indigenous communities. Further study of this topic must include new measures of collaboration to incorporate Indigenous voice into the historical record without the editorial oversight displayed in these early collections.

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