POST-TERRESTRIAL INDIAN GAMING

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Remember the sky that you were born under, know each of the star’s stories. Remember the moon, know who she is.

—Joy Harjo

Abstract

U.S. Federal Indian Law is built upon presumptions that tribal sovereign power derives from land claims. But as the digital economy grows, land-based constraints on tribal authority effectively punish tribes who attempt to participate. This terrestrial notion of tribal sovereignty will also block tribes from engaging in the space economy once it matures. Land-centered sovereignty is embedded within the Indian Gaming regulatory framework. The Indian Gaming Regulatory Act’s (“IGRA”) “Indian Lands” requirement and its presumption of land-based casinos make Indian Gaming an expression of terrestrial sovereignty only. Online gambling and mobile sports wagering are not land-based and therefore are not anticipated by IGRA. Tribal innovation in digital gaming is being suppressed as a result. Bound by a terrestrial gaming statute, tribes face a tradeoff that runs counter to IGRA’s policy goals: retain their self-regulatory status and remain land-based or sacrifice regulatory autonomy and offer digital gaming as a regulated commercial operator. This dilemma foreshadows the challenges tribes will face in participating in the space economy under a model of terrestrial sovereignty. Resolving this tension in the gaming context will halt excess litigation and maximize tribes’ abilities to engage as full economic and regulatory participants in new economies and spaces. A forward-looking vision unconstrained by a tribe’s terrestrial land base is needed. The present article affirms the inherent right to a futuristic sovereignty that anticipates new mechanisms of its expression and establishes that these expressions compel federal legislative action.

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1 Joy Harjo, She Had Some Horses 40 (1983).
I. INTRODUCTION

In the context of the American legal system, tribes are regarded as sovereign nations capable of self-governance and treaty-making. Sovereignty is an inherent authority possessed by a tribe over its land and people. Federal action generally does not grant tribes new authority, but rather circumscribes pre-existing intrinsic rights. In fact, precursors to the exercise of tribal sovereignty have existed for centuries—and in some cases millennia—longer than the American Constitution. Within its territory, a tribe’s authority (sometimes exclusive) is a natural extension of its inherent sovereignty. It has only been through treaties, acts of Congress, and a subsidiary relationship with the United States as “domestic dependent nations” that tribal sovereignty has been eroded. A new inhibitor of tribal self-determination is on the horizon, however, and the gaming industry offers an early opportunity to take corrective action.

Legally, a federally recognized tribe’s ability to maintain sovereign control is usually attached to the territory it occupies. Indeed, Indian lands are the centerpiece of federal laws recognizing tribal jurisdiction and the U.S. government’s fiduciary duty owed to tribes under the trust doctrine. The statutes

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8 This is a logical inference when considering Worcester and its historical context. Worcester, 31 U.S. at 557 (“All these acts . . . consider the several Indian nations as distinct political communities, having territorial boundaries, within which their authority is exclusive, and having a right to all the lands within those boundaries, which is not only acknowledged, but guaranteed by the United States.”).
9 The federal trust responsibility is a legal commitment wherein the United States has “charged itself with moral obligations of the highest responsibility and trust.” Seminole Nation v. United States, 316 U.S. 286 (1942); see also United States v.
in place today, including IGRA, specifically impose structure onto exercises of tribal sovereignty within “Indian Lands” or “Indian Country.”\(^{10}\)

Prior to the digital age, reflecting the centrality of a tribe’s land in legislation was conventional, without controversy, and a pragmatic approach to U.S. Federal Indian Law. And for gaming tribes, thirty-five years of economic development through land-based casinos have been built upon this model of statutory drafting.\(^{11}\) In the wake of the *Cabazon* decision—an accelerant for IGRA’s passage—gaming tribes awaited formal regulatory clarity.\(^{12}\) IGRA delivered that clarity, along with skyrocketing Indian Gaming revenues—until recently.\(^{13}\) At the time of this writing—when online play accounts for roughly twenty-five percent of commercial gaming revenues—the same statute that once propelled Indian Gaming forward now inhibits further growth.\(^{14}\) That is to say, IGRA prevents tribes from offering online gaming because wagers originating outside reservation lands were not anticipated by the statute.

It is difficult to miss the upheaval. The Seminole Tribe of Florida has been whipsawed by a ruling that forced the closure of their Hard Rock Sportsbook just weeks after launch (on the grounds that their compact’s sports betting provisions attempted to regulate off-reservation bettors, thereby violating IGRA).\(^{15}\) Meanwhile, tribes across the country must decide whether to compete as operators in the commercial markets and abandon their rightful self-regulatory posts. For most tribes that do not have the resources to purchase a commercial operation, each quarter of growth in digital gaming estranges them further from IGRA. To be sure, tribal gaming authorities, scholars, legislators, regulators, and gaming attorneys are aware of the digital gaming tsunami and IGRA’s impotence in addressing it. Proposals for congressional action, statutory amendments, Unlawful Internet Gambling Enforcement Act (“UIGEA”) reform, and narrowly

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Mason, 412 U.S. 391 (1973); Morton v. Mancari, 417 U.S. 535 (1974); “The United States holds legal title to Indian lands, yet those lands cannot be disposed of or managed contrary to the equitable title resting with Indians ... while the United States Government has the appearance of title as the nominal owner of Indian trust lands, it is actually holding title entirely for the benefit and use of the Indian owners.” American Indian Policy Review Commission, *Final Rep. to Congress*, Vol. 1, Ch. 4: Trust Responsibility (May 1977).


\(^{13}\) Akee et al., *supra* note 11, at 194.


focused legal maneuvers litter the scholarly literature. The solutions tend to be reactive and narrowly crafted around the Seminole experience. Fortunately, there exists a more proactive, forward-looking, and enduring solution.

Ensuring that the policies and promise of Indian Gaming survive a shift online requires analysis of the issues within IGRA’s foundation, not those presented on its surface. The fundamental reason for IGRA’s failure is that it is a terrestrially-locked statute regulating an industry that is increasingly non-terrestrial. More specifically, gaming is moving from terrestrial casino floors under the jurisdiction of the operator onto mobile devices which by definition are not jurisdictionally locked. Importantly, IGRA is not unique in this regard, as the majority of the statutes of U.S. Federal Indian Law remain terrestrially-locked. Today, gaming (and non-gaming) tribes are reckoning with the meaning of their sovereignty and statutes in cyberspace, in air space, and non-terrestrial domains, generally. Gaming is ground zero in a struggle to protect sovereignty that transcends industry. Solving IGRA’s problems through examination of its terrestrial roots will provide a roadmap for installing non-terrestrial jurisdiction into the full corpus of U.S. Federal Indian Law.

The most remarkable gifts of terrestrially-agnostic statutes will be seen in humanity’s final non-terrestrial jurisdiction—space (such jurisdictions are referred to hereafter as “post-terrestrial”). We stand at the dawn of an interplanetary economy, the most expansive domain for the expression of tribal autonomy ever accessible by humans. In 2021, Jared Isaacman placed the first sports wager from Low Earth Orbit (“LEO”), which foreshadowed a category of gaming – post-terrestrial gaming – that would be impossible for IGRA to regulate in the statute’s present form. As more wagers are placed at increasing distances from Earth’s surface and commercial interest builds, the case for retooling IGRA will grow stronger. A post-terrestrial IGRA would serve as a model for...

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16 Koichi R. Aton, Note, Tribal Casinos and Online Gaming: Hurdles in Modifying State Charters to Meet the Digital Era, 13 UNLV GAMING L. J. 109, 110–33 (2022); see also Austin R. Vance, A Pretty Smart Answer: Justifying the Secretary of the Interior’s “Seminole Fix” for the Indian Gaming Regulatory Act, 40 AM. INDIAN L. REV. 325 (2016).

17 The latest myopic example being 25 C.F.R. § 293.26 which simply broadens the scope of allowable compact provisions to include allocation of jurisdiction when the server receiving wagers is on tribal lands. A narrow fix for a sovereignty-sized problem. Regardless, from a technological standpoint, the flow of web packets is not predictable in this way as they may take circuitous paths before arriving at a tribal server. This argument may come to be attacked on these grounds.


disconnecting American Indian recognition and legislation from land. Definitions of tribal status free from terrestrial constraints will be key to tribal economic development in today’s digital economy and tomorrow’s space economy.

In recognition of the inherent right American Indian tribes have to full participation in non-terrestrial and post-terrestrial economic activity, this manuscript respectfully endeavors to: (1) explore the impact of terrestrally-locked doctrine on tribal sovereignty and economic development; (2) reframe IGRA’s intolerance of online gambling as a symptom of terrestrial sovereignty’s breakdown in a non-terrestrial economy; (3) propose forward-looking amendments that account for Indian Gaming operations in terrestrial and post-terrestrial venues; and (4) outline a role for Indian Gaming regulation as an accelerant in the construction of post-terrestrial tribal recognition. In so doing, the groundwork will be laid for expanding tribal stewardship beyond Indian Country and as deep into virtual and interplanetary space as tribes may elect to go.20

II. TERRESTRIAL TRIBAL SOVEREIGNTY

American Indian tribes possess inherent sovereignty which translates to “self-rule” within their territory.21 However, U.S. Federal Indian Law constrains this tribal sovereignty to tribal lands. Historically, the sovereignty of American Indian tribes in the United States was tethered to land—both forfeiture of land through treaty and self-government in lands subsequently allocated.22 This legacy is reflected in U.S. Federal Indian Law, where the sum of all Indian “territory” is collectively referred to as “Indian Country”:23

20 The present article does not intend to represent a tribal position on the matters of space exploration and resource utilization. Given the complex history involving tribes and extractive industrial frontiers, there may be varying tribal opinions on whether and to what extent participation in the in-space economy is justified. It is important that tribes be free to decide amongst themselves whether to participate in the space economy or not. The author simply offers one potential on-ramp for those tribes who may wish to be involved. Moreover, this manuscript does not offer any arguments as to what tribes ought to do but rather only what tribes ought to be able to do.


22 Id. at 9 (“In return for giving up almost all the land in the U.S., the U.S. made promises to the tribes. It promised to respect their rights over reserved land, and to recognize that those lands would be governed by tribes, not by the state governments.”).

(a) all land within the limits of any Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation, (b) all dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state, and (c) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.

The United States recognizes federal, state, and tribal sovereignty. Of the three, only tribal sovereignty operated before the formation of the United States. Still, per the Commerce Clause, the federal government maintains a degree of control over Indian tribal sovereigns.24 Today, the legacy of terrestrial sovereignty continues as many tribal members live and work on reservations held in trust by the federal government. Importantly, not all American Indian tribes secured these rights through a treaty with the United States, implying the existence of an amorphous non-terrestrial sovereignty disconnected from land. The statutes of U.S. Federal Indian Law are, in their present form, incompatible with non-terrestrial definitions of sovereignty. Amendments may be required to protect tribal wellbeing and economic development in the future.

A. Terrestrial Constraints Pervade American Indian Law

For humanity’s history as a single-planet species whose industries were entirely analog, terrestrial sovereignty was a suitable regime. This is no longer the case, as sovereigns now interact in cyberspace and, increasingly, in outer space. Importantly, nearly all of U.S. Federal Indian Law is moored by land-based conceptions of sovereignty. Indeed, the core statutes governing American Indian life—past and present—were written to reflect application on “Indian Lands,” in “Indian Country,” or a combination thereof. Terms such as “Indian Country” and “Indian Lands” bridge philosophy and doctrine, enabling abstract models of terrestrial sovereignty to directly impact tribal affairs. The legacy of terristrally-locked statutory drafting echoes across all areas of tribal activity, presenting a challenge for non-land-based economic development. Notable examples of U.S. Federal Indian Law statutes restricted by terrestrial language include:

24 U.S. CONST. art. 1, § 8, cl. 3 (“The Congress shall have Power . . . To regulate Commerce with foreign Nations, and among the several States, and with the Indian Tribes; . . .”).
1. The Indian Civil Rights Act (“ICRA”), which explicitly defines civil liberties for American Indians and protects against their violation.25

2. The Indian Child Welfare Act (“ICWA”), which functions to “[p]rotect the best interests of Indian children and to promote the stability and security of Indian tribes and families”26 and of course,

3. IGRA, intended to promote “tribal economic development, self-sufficiency, and strong tribal governments.”27

To better understand the relationship between terrestrial conceptions of sovereignty and the doctrines embodying them, U.S. Federal Indian Law statutes were analyzed for the frequency, variety, and distribution of prototypical terrestrial language (Figure 1). Figure 1 plots the frequency with which specific terrestrial vocabulary appears in each statute and its subsections.28 Each statute is affected by distinct terrestrial limits, reflected in the integration of terrestrial language across its sections. In principle, the greater the variety and frequency of prototypical land-based terms within a statute, the less flexible that statute would be in a non-land-based setting. Further, a statute with diffusely distributed terrestrial terms (i.e., spread out across its subsections rather than concentrated in one or a few) would be less amenable to amendment should its terrestrial orientation become a problem.

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25 25 U.S.C. § 1304(a)(10) (“The term ‘participating tribe’ means an Indian tribe that elects to exercise special Tribal criminal jurisdiction over the Indian country of that Indian tribe.”).

26 25 U.S.C. § 1911(a) (“An Indian tribe shall have jurisdiction exclusive as to any State over any child custody proceeding involving an Indian child who resides or is domiciled within the reservation of such tribe, except where such jurisdiction is otherwise vested in the State by existing Federal law.”); 25 U.S.C. § 1902 (stating ICWA’s policy goals).


28 Note that all appearances of the terms “Indian Country,” “Indian Lands,” and “Indian Land” were included in the analysis, but instances of “Land” and “Lands” were filtered out when the context did not imply a terrestrial constraint. Data analysis was performed using R (R Core Team (2023). R: A Language and Environment for Statistical Computing. R Foundation for Statistical Computing, Vienna, Austria. <https://www.R-project.org/> and the ggplot2 package) H. Wickham, ggplot2: Elegant Graphics for Data Analysis, SPRINGER-VERLAG NEW YORK (2016).
Strikingly, of the statutes analyzed, IGRA possessed the broadest variety of key terrestrial terms, as well as the greatest absolute number of references to them. This dataset suggests that IGRA is the most terrestrially constrained U.S. Federal Indian Law statute (though not the only one affected). It can be inferred that IGRA would be most susceptible to disputes over non-terrestrial matters. Insofar as this is true, IGRA may offer the earliest warning signs should terrestrial sovereignty begin to prevent U.S. Federal Indian Law from serving its policy goals. These findings also comport IGRA’s recently observable fragility when it comes to digital gaming (a non-terrestrial gaming context).29

B. Innovate, Litigate, or Stagnate: The Cost of Non-Terrestrial Sovereign Expression

The pervasiveness of terrestrial language within and amongst U.S. Federal Indian Law statutes highlights the fragility of this body of law in the modern era. Explicit terrestrial constraints already impact tribes in multiple negative ways—without considering cyberspace and outer space.30 Growth in

30 See, e.g., Morgan Bazilian, Native American Energy Sovereignty is Key to American Energy Security, WOODROW WILSON INT’L CTR. FOR SCHOLARS (Nov. 9,
these sectors will simply expose more statutory landmines. In the analog world, this model of statutory drafting is the basis for tribal neglect by the federal government, as land-based sovereignty is weaponized to selectively expand and contract the Federal trust responsibility at will.31

The Catawba Nation, a tribe native to the Carolinas, are at the vanguard of regulatory creativity, particularly when it comes to cryptocurrency.32 On its face, stimulating tribal innovation would appear quite positive. The problem is that terrestrial statutes are a forcing function, rather than a foundation, for tribal ingenuity. When tribes seek to participate in non-terrestrial economic activity, they face a choice: find ways to construe existing terrestrial statutes, or build a new system from the ground up in which to operate. The Seminoles opted for the former (incorporating sports betting language into their Compact) and had their sports betting operations abruptly shut down in Florida, while the Catawba must opt for the latter and construct elaborate workarounds.33 In both instances, sovereignty is an inconvenience rather than an asset. Effectively, when tribes wish to pursue business interests in an area with no nexus to tribal land, the legislative burden falls on them rather than the federal government. In this context, technological and/or legal innovation are coerced rather than inspired.

The Catawba Nation’s success in implementing digital currency demonstrates the elaborate regulatory engineering a tribe will undertake to assert non-terrestrial economic self-determination. In developing the Catawba Digital Economic Zone (“CDEZ”), the Tribe has drafted new bodies of law for activity therein. The CDEZ has its own internally developed bodies of tort law, property law, a Uniform Commercial Code, administrative rules, appellate procedure, and

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31 The Court has directly used land-based sovereignty as justification for ignoring the Navajo’s water needs: “it would be anomalous to conclude that the United States must take affirmative steps to secure water given that the United States has no similar duty with respect to the land on the reservation.” Arizona v. Navajo Nation, 599 U.S. 555, 565 (2023); see also Navajo Nation, 599 U.S. at 574 (Thomas, J., concurring) (targeting the “trust relationship," dismissing it as “mere dicta”).


33 See generally 2021 Gaming Compact Between the Seminole Tribe of Florida and the State of Florida, STATE OF FLA. & SEMINOLE TRIBE OF FLA. (Apr. 23, 2021) [hereinafter 2021 Compact]. The Seminoles attempted to negotiate for sports betting through the channels prescribed by IGRA (i.e., via tribe-state compact); Enabling Legislation, CATAWBA DIGIT. ECON. ZONE, https://zoneauthority.io/enabling-legislation/ (last visited Dec 1, 2023). The Catawba, however, created regulatory models de novo.
even more pending approval.\textsuperscript{34} A Banking Code, and Stablecoin Regulations are forthcoming.\textsuperscript{35} Corporate entities in the form of Decentralized Autonomous Organizations (“DAOs”) can be established in the CDEZ, allowing them reduced legal burden.\textsuperscript{36}

However, the Catawba banking system is effectively restricted to tribal lands as a direct extension of its terrestrial sovereignty. The core constraints follow:\textsuperscript{37}

1. . . . any Native American tribe that plans to create a depository institution must do so under either a federal or state charter.
2. Historically, only state and federally chartered banks have obtained FDIC insurance [and] under federal law, non-banks are generally prohibited from receiving deposits through interstate commerce . . .
3. . . . Federal Circuit Courts have generally ruled that Native American tribes cannot enforce tribal law in arbitrations with consumers located outside of tribal territory . . .

Despite the intricacies of the system the Catawba have engineered, the above barriers will cast a shadow over its continued development, guiding their process to a greater extent than the Tribe’s best interest will.

Through the creation of the CDEZ, the Catawba have exemplified the vast regulatory wisdom accumulated amongst many tribes.\textsuperscript{38} It is not a stretch to imagine tribes as valued, authoritative, regulatory partners in view of the Catawba’s initiative alone. Creating a legally justified digital economic zone and banking code, requires sophisticated legal and IT expertise much like what will be required for defining the contours of the space economy. The same can be said for digital gaming. Internally-managed tribal networks and/or satellites—an architecture not initially anticipated by the Wire Act—may offer a solution for

\textsuperscript{34} See Enabling Legislation, supra note 33.
extending the reach of tribal sovereignty. The Catawba have already created much of the infrastructure required for a tribal network. However, as a general principle, the direction of American Indian technology development and regulatory innovation ought to be fostered rather than coerced.

III. GAMING AS AN EXPRESSION OF TERRESTRIAL SOVEREIGNTY

Indian Gaming is the most consequential example of land-based sovereignty applied to critical tribal economic development strategies. On Earth’s surface, there are two parallel regulatory structures in the gaming industry: Indian Gaming on tribal lands, and commercial gaming subject to jurisdiction-specific regulators. For commercial gaming, state enforcement and licensing bodies may be subject to state constitutional provisions as well as federal statutes such as the Wire Act, Johnson Act, UIGEA, IGBA, Travel Act, Bank Secrecy Act, and RICO to name some. The administration of Indian Gaming, on the other hand, is a self-regulatory exercise checked by a central federal statute, dedicated Indian regulatory bodies, and the competing incentives that shape tribe-state negotiations (while still adhering to peripheral federal laws).

The specific statutory foundation supporting the administration of gaming by American Indian tribes in the United States is the Indian Gaming Regulatory Act of 1988. In collaboration with the tribes it serves, the National Indian Gaming Commission (“NIGC”) functions as an autonomous organ of the Department of the Interior (“DOI”) ensuring that the policy goals of IGRA are

42 See generally 31 U.S.C. §§ 5361–5367; 15 U.S.C. §§ 1171–1178; 18 U.S.C. § 1084. It is true that Indian Gaming is checked by IGRA (a single dedicated federal gaming statute) on Indian Lands. However, other federal statutes do apply outside of Indian Country (e.g., Johnson Act), and in cyberspace when crossing jurisdictional boundaries (e.g., Wire Act; UIGEA). The distinction here is that Indian operators of commercial gaming enterprises or those that attempt to administer digital gambling to off-reservation bettors end up ensnared in multiple other Federal regulations. That is to say, Indian Gaming under a single statute only exists in the narrow cases of land-based tribal casinos in Indian Country or digital gaming administered entirely within Indian Lands.
fulfilled. This is accomplished through ordinances, regulatory oversight, enforcement, and coordination with government agencies as necessary. The policy justification for an Indian Gaming statute was, and continues to be, fostering the economic wellbeing of tribes and protecting gaming from bad actors. Signed into law by President Ronald Reagan, IGRA is an inherently terrestrial federal statute, rooted in the idea of territorial sovereignty. That is to say, IGRA functions as a land-based framework, allocating jurisdiction based on the geographic location of gaming activity. It is important to note that IGRA is not unique in this regard, as Indian Law, generally, flows from the same land-based definitions of tribal sovereignty. For tribal gaming operations to be sanctioned under IGRA they must be conducted on “Indian Lands.” The statute defines “Indian Lands” as follows:

(A) all lands within the limits of any Indian reservation; and (B) any lands title to which is either held in trust by the United States for the benefit of any Indian tribe or individual or held by any Indian tribe or individual subject to restriction by the United States against alienation and over which an Indian tribe exercises governmental power.

From the statutory language there is no Indian Gaming per se outside of Indian Country. There does exist a narrow pathway to annex territory via the Indian Reorganization Act, however the land-into-trust process is complex and only invoked in exceptional circumstances. As a general rule, land acquired

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44 Id.
“after October 17, 1988” is not to be used for gaming activities. The fundamental problem with IGRA is visible here, namely, that it does not assign jurisdiction for activities taking place—in whole or in part—beyond Indian Lands. As the Seminole Tribe of Florida has found out, hosting a non-terrestrial service in an industry governed by a wholly terrestrial statute invites litigation and chaos.

IV. NON-TERRESTRIAL INDIAN GAMING

When tribes wish to engage in economic activity that is not land-based, terrestrial statutes impose a significant litigation burden, alienating them from the industries that sustain their economic development. IGRA’s land-based framework blocks tribes from full participation in digital gambling, thereby demonstrating the limits of terrestrial sovereignty in this critical industry.

A. Defining Non-Terrestrial Indian Gaming

Gaming is expected to continue migrating from land-based casinos to online form. Operators are actively assessing how to cater to Millennials and the older wing of Generation-Z. This demographic consists of digital natives, sports bettors, and esports enthusiasts. The health and vitality of Indian Gaming will hinge on meeting the demands this generational shift poses, including a transition to online platforms. Non-Terrestrial Indian Gaming (“NT-IG”) describes iGaming, sports betting, esports wagering, and any other gaming activities transmitted over an internet connection irrespective of the location of the bettor relative to the server receiving their wager. Because tribal gaming is generally governed by IGRA, a terrestrial statute, it is unclear whether and how tribes will be able to fully engage in this increasingly non-terrestrial industry.

The Seminole Tribe of Florida sought to offer sports betting and has since

53 See infra Part V.B.
54 “[F]ull participation” here means not having to: I) concede self-regulatory capacity, II) operate in the commercial market, III) restrict wagers to reservation lands, and IV) submit to piecemeal frameworks and workarounds (such as legally bifurcating on- and off- reservation betting) which reduce gaming to only a partial expression of sovereignty. The best models proposed for tribal sports betting thus far are still limited by the constraints of terrestrial IGRA. Therefore, each requires at least one of these concessions and thereby precludes full participation. But see e.g. Kathryn R.L. Rand & Steven A. Light, Tribal Sports Betting: Three Models of Legalization, 27 GAMING L. REV. 2 (2023).
55 This article uses the term “non-terrestrial” gaming to describe online gambling that is inclusive of players inside and outside of Indian Country, transmitting wagers via remote servers.
been mired in high-profile litigation. Regardless of the outcome, the Seminole experience with sports betting will have planted a flag indicating the urgent need for a non-terrestrial gaming statute. Tribes without sufficient land or resources to build a brick-and-mortar casino would be economic beneficiaries of any legislation aimed at expanding their opportunities to administer online gaming.

B. Tribal-Self-Regulation vs. Commercial Operation

Gaming has long been a major economic driver in Indian Country and a triumphant expression of tribal sovereignty. However, the current regimes of Indian and Commercial gaming are shutting tribes out—albeit in different ways. Indian Gaming regulation precludes federally recognized tribes from offering online gaming products, and commercial gaming blocks those without sufficient resources from operating in the general market. In the former case, tribal innovation is handicapped, and in the latter case, self-regulatory capacity is relinquished. This narrows the pool of gaming tribes substantially. The terrestrial IGRA’s failure to anticipate online gambling forces tribes to settle for sub-optimal commercial and regulatory statuses.

1. Rand and Light’s Models

IGRA made special rules allowing tribes to gain a foothold in the gaming industry which could then be parlayed into broader economic participation. The graduated system this created is arguably why IGRA was as successful as it was at serving its policy goals. For some tribes, like the Mississippi Band of Choctaw Indians, success in gaming led to economic diversification and wealth. The San Manuel Band of Mission Indians also found success starting with IGRA, and they graduated first within the gaming industry to become commercial operators (and eventually beyond it). As Akee et al. observe:

Tribal governments have also used the revenues from gaming to fund other economic development, based on the widely

58 Immediately pre-IGRA: “The introduction of Tribal Government gaming on the Reservation in the mid-1980s brought about a more secure economy and enabled our Tribe to rebuild its governance capacity.” Then in 1989 (post-IGRA) the tribe drafts the San Manuel Gaming Act, and at the turn of the century offers Class III gaming. Finally, as of 2022, the Tribe “owns the subsidiary entities that hold and operate Palms Casino Resort”—a commercial casino in Las Vegas, Nevada. San Manuel Band of Mission Indians, History, SAN MANUEL TRIBAL GOV’T, https://sanmanuel-nsn.gov/culture/history.
shared view that Indian gaming will not provide sustained economic growth indefinitely. Typically, the pattern begins with developing adjacent hotels, conference halls, amphitheaters, and other amenities that increase the drawing power and visit durations of gaming facilities. In many cases, tribes have invested in nearby retail businesses, outlet malls, and other businesses that take advantage of customer traffic. Finally, they turn toward more distinct sectors as varied as banking (Citizen Potawatomi Nation), commercial real estate (San Manuel), and federal facilities management (Winnebago), often redeploying the management experience gained in tribal gaming development.59

These tribes are prototypes of the different mechanisms by which IGRA could broaden a tribe’s economic base. Critically, the tribes alluded to above, graduated from dependence on IGRA voluntarily. This system is no longer functioning as it once did as gaming tribes are being effectively forced to sacrifice their regulatory power to keep pace with the gaming industry as it evolves. Tribes seeking to offer online gaming are facing a choice: settle for litigation and confusion over IGRA’s blind spots or become a commercial operator and forfeit the ability to self-regulate.60 These are meaningful sacrifices. Rand and Light empirically define the three models of sports betting legalization into which tribes have been thrust: the “Compact Model,” the “Commercial Model,” and the “Combined Model.”61

The Compact Model most closely resembles the land-based status quo where Indian Gaming is administered on-reservation and negotiated within the terms of a compact. The limitations of this approach are that sports bettors physically located off-reservation would be unable to participate, thereby reducing the potential size of the customer base.

Unfortunately, there does not exist a clear and uniformly enforced protocol for tribes to offer sports betting to patrons outside Indian Country while still remaining within the Indian Gaming regulatory regime.62 Tribes with

59 Akee et al., supra note 11, at 197 (emphasis added).
60 “The problem for tribal gaming operations is that the law forces Tribes to make a choice between sovereignty and access . . . In some cases, Tribes are forced to give up sovereignty and agreeing to be taxed just to be part of the market, for fear that if they do not participate, commercial operations may overrun them.” John T. Holden, Access or Sovereignty, 74 EMORY L.J. (forthcoming).
61 See generally Rand & Light, supra note 54.
62 Some might argue that the new rules from the Bureau of Indian Affairs put this issue to rest. They do not. 25 C.F.R. § 293.26 indeed broadens the scope of compacting such that the process “may include provisions addressing statewide remote wagering or internet gaming that is directly related to the operation of gaming activity on Indian lands.” However, this is not a uniformly applicable
sufficient resources have on occasion opted to forego self-regulation, become participants in the general commercial market, and answer to state regulators rather than the NIGC. The path for tribes to host gaming activities not anticipated by IGRA is not equitable. The Commercial Model asymmetrically benefits a handful of wealthier tribes and filters out those with less expendable resources. Although tribes are technically free to compete in the commercial markets (subject to applicable state and federal laws) the costs are prohibitive for most. Since the provisions of Indian Gaming would not apply to these commercial gaming operations, those tribes which can afford it are still disadvantaged by state regulatory models.

For the Seminole Tribe of Florida and the San Manuel Band of Mission Indians—both of whom own off-reservation commercial gaming operations—the terrestrial limits of IGRA have evidently not impeded growth.63 For most tribes though, the barrier to entry makes it practically impossible to operate a non-IGRA-bound property. Rand and Light have outlined a third Combined Model that is a hybrid between the Compact and Commercial models.64 This model compartmentalizes gaming on-and-off-reservation such that each is subject to a distinct legal framework. For example, a tribe’s gaming operation on their land would be bound by IGRA and compact terms—but under state jurisdiction beyond its boundaries. Following a combined model would be functional in the short-term, but delay needed statutory reform long-term. The fundamental problem is the reservation model and its terrestrial limitations which shut tribes out of industries that are no longer exclusively connected to land. As a result, tribes are being shut out of the digital economy (and will be disqualified from the space economy). A recent situation in California provides a case study of what is to come if IGRA remains wholly terrestrial.

2. Propositions 26 and 27

In 2022, dueling visions for California sports betting—Propositions 26 and 27—publicly laid bare the grim reality IGRA is creating. Proposition 26, a California constitutional amendment, would have permitted sports betting negotiated via tribal-state compacts on Indian lands.65 Proposition 27, another failed California constitutional amendment, would have legalized sports betting solution. Instead, it is a narrow fix that still needlessly places expression of a tribe’s sovereignty at the whim of its host state. Non-terrestrial Indian Gaming is not a gift to bargain over, it is an inherent right.


64 See Rand & Light, supra note 54, at 61.

for tribal and non-tribal partners in the commercial market, for bettors outside of Indian Country. If passed, the former would have significantly restricted sports betting to the confines of Indian Gaming, and the latter would have pulled tribes into private market collaborations. The defect common to both is that tribes are not conceptualized as regulators, but rather pigeonholed into burdensome compliance regimes that run counter to tribal self-determination. Choosing between on-reservation Indian Gaming, or off-reservation commercial partnerships, is a recurring theme borne of the fallacy of terrestrial sovereignty.

The California experience is just one example in a growing landscape of exotic proposals that inhibit tribal participation. As legal regulated sports betting and internet gaming account for a growing share of national gaming revenue, the limits of the terrestrial IGRA will deepen the competitive disadvantage tribes face. Reimagining IGRA without terrestrial constraints will reduce the unnecessary litigation burden on enterprising tribes, improve public perception, and enable the broadest expression of tribal sovereignty.

V. SEMINOLES LAUNCH NON-TERRESTRIAL INDIAN GAMING ON THE SPACE COAST

Terrestrial models of Indian Gaming do not account for mobile sports wagering outside of Indian Country. Settling for sports betting exclusively on tribal land is a concession that diminishes self-regulatory capacity, handicaps market size, and excessively restricts the scope of sports betting products. The Seminole Tribe of Florida sought to avoid this concession and in so doing offered the first demonstration of non-terrestrial Indian Gaming. The legal challenges to their compact demonstrate the constraints terrestrial sovereignty imposes on a tribe’s authority beyond its lands.

A. Statutory Barriers

Gaming is among the most heavily regulated industries and Indian Gaming is no different. IGRA is one of many federal statutes regulating Indian

67 This is not to say that tribes should be able to offer digital forms of gambling everywhere without limitation or regulation. Parity with other sovereigns is the motivation here. Unlike American Indian tribes, other land-based sovereigns are not restricted from non-terrestrial commerce. Should a tribe wish to build digital infrastructure, offering gaming via its own networks ought to be an allowable expression of non-terrestrial sovereignty. One can imagine a tribal satellite constellation, for example. To be sure, the limiting principle here is that state and federal laws must be respected. IGRA can be thoughtfully amended for the modern technological age without trampling on the dominion of state regulation.
Gaming. There are three “class[es]” of gaming under IGRA. Class I refers to “social games solely for prizes of minimal value or traditional forms of Indian Gaming engaged in by individuals as a part of, or in connection with, tribal ceremonies or celebrations.”\(^{68}\) Class II includes “the game of chance commonly known as bingo[.]”\(^{69}\) Class III is defined in relation to the other two as “all forms of gaming that are not class I gaming or class II gaming.”\(^{70}\) Class I gaming is exempt from IGRA and regulated exclusively by tribes, Class II is jointly regulated by tribes and the NIGC, and Class III has the added requirement of a tribal-state compact negotiated in good faith.\(^{71}\) Approval from the Secretary of the Interior is the final step before a compact can be executed.\(^{72}\) Sports betting is an example of Class III gaming, along with most traditional casino-style gambling, and therefore subject to this process.

Multiple federal statutes regulate Indian Gaming in addition to IGRA, notably the Wire Act and UIGEA.\(^{73}\) To become commercially viable, non-terrestrial Indian Gaming will need to survive challenges brought under the Wire Act.\(^{74}\) UIGEA is not as troublesome since it contains a safe harbor provision exempting wagers “within the Indian lands of a single Indian tribe” and “between the Indian lands of 2 or more Indian tribes to the extent that intertribal gaming is authorized by the Indian Gaming Regulatory Act.”\(^{75}\) As a result, compliance with IGRA would preempt UIGEA infractions.\(^{76}\) Unlike IGRA, the Wire Act plagues commercial and tribal operators alike.\(^{77}\) The Interstate Wire Act of 1961 is a federal statute that prohibits electronic wagering across state lines.\(^{78}\) It is a complex statute whose implementation is becoming more onerous and inconsistent.\(^{79}\) Theoretically, when a patron places a bet from a location outside

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\(^{68}\) 25 U.S.C. § 2703(6).


\(^{70}\) 25 U.S.C. § 2703(8).

\(^{71}\) 25 U.S.C. § 2710.

\(^{72}\) Id. at § 2710(d)(3)(B).


\(^{74}\) “The Wire Act has two substantive components, one prohibits the interstate transmission of information assisting in placing bets and wagers, but contains a safe harbor where the underlying activity is legal in both jurisdictions. The second component completely bars interstate wagering.” Holden, supra note 60.


\(^{76}\) See id. at § 5352 (B)(iii)(IV) (“The term ‘unlawful Internet gambling’ does not include placing, receiving, or otherwise transmitting a bet or wager where . . . the bet or wager does not violate any provision of . . . the Indian Gaming Regulatory Act.”).

\(^{77}\) The language and application of the Wire Act are broad. 18 U.S.C. § 1084(a) (“Whoever being engaged in the business of betting or wagering knowingly uses a wire communication facility for the transmission in interstate or foreign commerce of bets or wagers . . .”).


reservation lands through a server in Indian Country, the wire transmission crosses meaningful jurisdictional borders. The placement of such bets would therefore be classified as interstate communications under the Wire Act and constitutes a federal offense. House Bill 4038, a congressional bill introduced in 2021, attempted to resolve this issue. The proposed legislation would have allowed off-reservation bets to be reclassified if the host server were located on Indian lands. Without the benefit of this legislation, the Seminole Tribe of Florida attempted to offer sports betting to off-reservation patrons. In the process, the Tribe spawned an argument in support of a new model of mobile wagering, resembling non-terrestrial Indian Gaming. That compact was the starting gun in the race to clarify non-terrestrial Indian Gaming law—though by other names.

B. The Seminole Server Argument

In the state of Florida, “[w]hoever stakes, bets, or wagers any money or other thing of value upon the result of any trial or contest of skill, speed or power or endurance of human or beast . . . commits a felony of the third degree.” Sports betting is therefore illegal in the state. In 2021, the only viable path for a tribe to offer sports betting in Florida was to explicitly negotiate for it as part of their tribal-state compact. IGRA requires the negotiation of tribal-state compacts in good faith, outlining the scope of gaming activities that are to be administered. The Seminole Tribe of Florida therefore renegotiated their compact in 2021 to include sports betting in the terms:

Sports Betting means wagering on any past or future professional sport or athletic event, competition or contest, any Olympic or international sports competition event, any collegiate sport or athletic event (but not including proposition bets on such collegiate sport or event), or any motor vehicle race, or any portion of any of the foregoing, including but not limited to the individual performance statistics of an athlete or other individual participant in any event or combination of events, or any other “in-play” wagering with respect to any such sporting event, competition or contest, except . . . [citations]

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80 It is technically true that even if the bettor and server were both on tribal lands, internet traffic takes unpredictable and circuitous paths, traversing multiple jurisdictional boundaries. Fortunately, the notion of “intermediate routing” is not outcome determinative under UIGEA. See 31 U.S.C. § 5362(10)(E).
82 Id.
84 Id.
86 2021 Compact, supra note 33, at § III(CC).
The most controversial language in the compact emerged from the Tribe’s decision to offer sports betting through their Hard Rock Sportsbook to customers outside of their tribal lands.87 Regarding wagers placed outside of Indian lands, the compact provided:

All such wagering shall be deemed at all times to be exclusively conducted by the Tribe at its Facilities where the sports book(s), including servers and devices to conduct the same, are located, including any such wagering undertaken by a Patron physically located in the State but not on Indian Lands using an electronic device connected via the internet, web application or otherwise . . . regardless of the location in Florida at which a Patron uses the same.88

The Seminoles interpreted this language as opening sports betting to all Floridians regardless of location, so long as transmission occurred through tribal servers on tribal land89 This interpretation supported the idea that web traffic flowing through servers positioned on Indian lands would be regulated as if it originated there. It appeared that the tribe had found a loophole to circumvent the illegality of sports betting in Florida.90 Indeed, the Seminole Tribe’s compact had implicitly reassigned jurisdiction for wagers originating outside of their lands.91 The Seminoles had been a trailblazing influence in Indian Gaming since launching the first land-based Indian Gaming establishment—a bingo hall—in

88 2021 Compact, supra note 33, at § III(CC)(2) (emphasis added).
89 “As technology and internet gaming evolve, other jurisdictions are deeming wagers to occur at a specified location. Multiple states have enacted laws that deem a bet to have occurred at the location of the server, regardless of where the player is physically located in the state. The Compact reflects this modern understanding of how to regulate online gaming.” (emphasis added). OFF. OF THE SEC’Y, U.S. DEP’T OF THE INTERIOR, Letter to Marcellus W. Osceola, Jr., Chairman, SEMINOLE TRIBE OF FLA., at 8 (June 21, 2021), https://www.bia.gov/sites/default/files/dup/assets/asia/oig/pdf/508%20Compliant%202021.08.11%20Seminole%20Gaming%20Compact.pdf.
90 FLA. STAT. § 849.14.
1979. And with this inventive compact, the tribe had been poised to do the same for sports betting. In an important sense, this was a direct expression of sovereignty in cyberspace—non-terrestrial sovereignty.

Without objection—or approval—from the Secretary of the Interior, the compact went into effect and the Hard Rock Sportsbook Florida was born in Autumn of 2021. By December of the same year, the app was shut down after the compact was vacated by the district court. West Flagler Associates, Ltd., et al. moved to sue the Secretary of the Interior in the district court for allowing the compact to go into effect. The plaintiffs purported to have identified violations of IGRA, UIGEA, the Wire Act, and the Fifth Amendment. The judge determined that the compact violated IGRA as its subject was gaming on and off Indian lands. Specifically, the judge suggested that the compact appeared to have the effect of sanctioning sports wagering outside of Indian Country. This decision was not immediately followed as the Tribe sought a stay pending appeal from the D.C. Court of Appeals, though it was ultimately denied. On June 30, 2023, the D.C. Circuit reversed the earlier decision by the district court that effectively shut down the sportsbook weeks after launch. The reversal highlighted IGRA’s insufficiency in covering online gambling. In the months since, West Flagler’s petition for an en banc rehearing has been denied.

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93 See 25 U.S.C. § 2710(d)(8)(B) (“If the Secretary does not approve or disapprove a compact . . . before the date that is 45 days after the date on which the compact is submitted to the Secretary for approval, the compact shall be considered to have been approved by the Secretary . . .”).
96 Id. at 263.
97 Id. at 275.
98 Id. at 273.
101 IGRA “[r]egulate[s] gaming on Indian lands, and nowhere else.” Michigan v. Bay Mills Indian Cmty., 572 U.S. 782, 795 (2014); “Thus, to be sure, an IGRA gaming compact can legally authorize a tribe to conduct gaming only on its own lands,” W. Flagler Assocs., Ltd. 71 F.4th at 1062.
Likewise, West Flagler appealed to the Supreme Court and was denied a stay.\textsuperscript{103} However, as of November 2023, the Seminoles have only relaunched sports betting in Florida in a “limited” fashion.\textsuperscript{104} For now, at least, IGRA will play a subordinate role to state law. The terrestrial IGRA is broken.

IGRA’s aging terrestrial provisions are increasingly a source of conflict between tribes, the Department of the Interior, state legislators, and regulators. Unfortunately, attempts to mitigate this issue by updating IGRA for digital gaming have been palliative rather than preemptive. Narrowly focused carveouts have been put forth in light of the litigation over the Hard Rock Sportsbook Florida. These would be yet more narrowly constructed bandages on a 1980s era terrestrial statute in need of reconstruction. The problem is more fundamental than the minutiae of Florida’s gaming law or the location of a sports bettor. At the core of this saga is the lack of clarity on the extension of IGRA specifically, and tribal sovereignty, generally, beyond physical land.\textsuperscript{105} That is to say, the status of sovereignty within a wire transmission requires definition. The district court may have been correct in questioning the compatibility of the compact with IGRA’s jurisdictional limits (i.e., Indian lands only). However, this obscured an opportunity to examine IGRA’s terrestrial roots and clarify tribal jurisdiction over the airwaves. The D.C Circuit’s reversal effectively reinstated the compact but failed to pressure test IGRA. The Supreme Court was correct in denying West Flagler a stay, but missed an opportunity to reconsider whether IGRA is faithfully serving its stated policy goals. Justice Kavanaugh’s framing demonstrates how:

If the compact authorized the Tribe to conduct off-reservation gaming operations, either directly or by deeming off-reservation gaming operations to somehow be on-reservation, then the compact would likely violate the Indian Gaming Regulatory Act, as the District Court explained. 573 F. Supp. 3d 260, 272-274 (DC 2021); see 25 U.S.C. §§2710(d)(1), (d)(8)(A). To the extent that a separate Florida statute (as distinct from the compact) authorizes the Seminole Tribe—and only the Seminole Tribe—to conduct certain off-reservation gaming operations in Florida, the state law raises serious equal protection issues. […] But the state law’s constitutionality is not squarely presented in this application, and the Florida Supreme Court is in any event currently

\textsuperscript{103} W. Flagler Assocs., Ltd. v. Haaland, No. 23A315, 601 U.S. (2023) (Kavanaugh, J., respecting the denial of the application for stay).


considering state-law issues related to the Tribe’s potential off-reservation gaming operations.106

This is not a matter of Florida state law, nor is it a matter of what violates IGRA. The fundamental inquiry to be made is about the scope of IGRA in non-terrestrial domains.

These arguments have consequences beyond Florida. Enforcement of the full compact would mean automatic classification of off-reservation web traffic as on-reservation. Should this happen, IGRA’s age will be further exposed, as will a model for Indian Gaming in space: jurisdiction-shifting. Jurisdiction-shifting is a concept currently being tested in the Seminole sports betting litigation. The Tribe has characterized its sports betting paradigm as reassigning jurisdiction over off-reservation sports wagers, not sanctioning it.107

In fact, power to transfer civil jurisdiction comes directly from the text of the statute in its present form.108 Regardless of whether the matter is appealed to the Supreme Court, the fiction of a jurisdictionally-reassigned bettor has broader utility than Floridian sports betting. Indeed, it provides a direct path to regulated event wagering in space, without statutory amendments.

VI. POST-TERRESTRIAL INDIAN GAMING

As the dust settles in Florida, there is an opportunity to proactively plan for future limits that terrestrial Indian Gaming law will present. The next fundamental challenge to terrestrial tribal sovereignty will revolve around participation in the nascent in-space economy. In much the same way that mobile wagering revealed IGRA’s non-terrestrial constraints, gaming in space will reveal post-terrestrial ones. This section presents a thought experiment on whether a tribe could conduct gaming in space and the amendments that would be needed to do so. It also argues that gaming in space should not and will not remain an abstract idea for long. Enacting regulated Indian Gaming in space can accelerate the formulation of a universal definition for tribal sovereignty.

A. The Case for Regulated Gaming in Space

On September 16, 2021, Jared Isaacman, the mission commander of Inspiration4, wagered on NFL football in LEO aboard the Dragon capsule.109

106 W. Flagler Assocs., Ltd., 601 U.S.
107 Wallach, supra note 91.
This was humanity’s first sports wager initiated from space. The same year as Isaacman’s historic wager, the space economy grew nine percent from the year before, to a staggering $469 billion. For context, these figures are from an era where there are no permanent human settlements or resource utilization infrastructure on other planetary surfaces. As SpaceX’s Starship program matures into the de facto railroad of the space economy, In Situ Resource Utilization (“ISRU”) will lead to growth in the industry spanning orders of magnitude. In the 2030s this will be driven by a bustling cislunar economy, and in the long term, resource utilization on other celestial bodies further off in our solar system. Gaming and extractive industry share a long and storied


Ryan Brukardt, How Will the Space Economy Change the World?, MCKINSEY & CO. (Nov. 28, 2022), https://www.mckinsey.com/industries/aerospace-and-defense/our-insights/how-will-the-space-economy-change-the-world#/. Demonstrations of space resource utilization (SRU) technology are abundant on Earth’s surface but have not been deployed for long-term sustained human benefit in space. See Jan Cilliers et al., Toward the Utilisation of Resources in Space: Knowledge Gaps, Open Questions, and Priorities, 9 NPJ MICROGRAVITY 22 (2023); Though some may consider the International Space Station (ISS) to be a permanent human outpost in space, it is in fact tentatively due to be deorbited (retired) by the start of the next decade. NASA, INT’L SPACE STATION TRANSITION REP. 9 (2022).

Adam Minter, Starship Launch Ushers in a New Space Economy, WASH. POST (Apr. 20, 2023, 10:30 AM), https://www.washingtonpost.com/business/energy/2023/04/20/starship-launch-ushers-in-a-new-space-economy/a81708cc-df88-11ed-a78e-9a7c2418b00c_story.html; “In-Situ Resource Utilization [“ISRU”] is the collection, processing, storing and use of materials encountered in the course of human or robotic space exploration that replace materials that would otherwise be brought from Earth to accomplish a mission critical need at reduced overall cost and risk.” Kurt R. Sacksteder & Gerald B. Sanders, In-Situ Resource Utilization for Lunar and Mars Exploration, 45TH AIAA AEROSPACE SCI. MEETING AND EXHIBIT 345 (2007).

history. Whether for entertainment, reinvestment in infrastructure, mental health preservation, attracting capital, or to promote comradery, gaming and mining have enjoyed a synergistic relationship. This section presents the core arguments for establishing regulated gaming in the next extractive frontier: space.

1. Space Resources: The Benefits of Gaming in Extractive Industrial Frontiers

The probability that we will live to see gaming in space is non-zero. In decades past, the aerospace industry allowed humanity to have a transient relationship with space. Under this paradigm, cohorts of elite astronauts specially selected for markers of health and aptitude visited LEO and even Earth’s moon. While humans were limited by expendable launch vehicles, astronomical payload costs, and the adequacy of resources that could be carried, landers, orbiters, and rovers roamed where we could not. The situation today is quite different. Reusable launch vehicles have driven down launch costs


115 The standards for Apollo astronauts, for example, were designed to select: “1. Individuals who were physically capable of performing astronaut duties; specifically those possessing the necessary physical and psychomotor capabilities and not subject to incapacitating physiological disturbances when exposed to the various stresses of space flight. 2. Individuals who were free of underlying physical defects or disease processes which could shorten their useful flight careers.” Indeed, “Apollo astronauts were initially medically screened by techniques which varied only in minor degree from those applied to the first seven Mercury astronauts.” W. ROYCE HAWKINS & JOHN F. ZIEGLSCHMID, BIOMEDICAL RESULTS OF APOLLO 45 (1975). See generally INST. OF MED., REV. OF NASA’S LONGITUDINAL STUDY OF ASTRONAUT HEALTH (David E. Longnecker et al. eds., 2004).

116 “Since most rockets and spacecraft of the 1960s were expended in the accomplishment of their missions, it was necessary to buy a new launch vehicle and a new spacecraft for each new mission.” HOMER E. NEWELL, BEYOND THE ATMOSHERE: EARLY YEARS OF SPACE SCIENCE 161 (1980). For a plot of historical launch costs per kg to LEO, see Luisa Corrado et al., Space Exploration and Economic Growth: New Issues and Horizons, 120 PROC. NAT’L. ACAD. SCI. U.S.A. 3 (2023).
significantly, enabling 180 orbital launches in 2022. Importantly, space is becoming accessible to civilians, raising concerns over the associated health impacts on those who will play critical roles in building in-space industries. In fact, the first all-civilian mission to reach orbit—Inspiration4—was successfully completed in September of 2021. This shift will enable crewed and uncrewed missions to build the infrastructure for a sustained human presence in space.

Ultimately, living off the land in space will require collaboration between humans and unmanned industrial robots in prospecting for essential resources. Aside from the involvement of autonomous robots, the closest historical precedent to the present moment is the mining boom in the American West. However, in the space resources era, the substrates for life support, transport, manufacturing, and construction are harvested in situ (on-site)—not hauled from Earth. Gaming revenues could flow to the construction of critical

117 Alexandra Witze, 2022 Was a Record Year for Space Launches, NATURE (Jan. 11, 2023) https://www.nature.com/articles/d41586-023-00048-7#:~:text=2022%20was%20a%20record%20year%20for%20space%20with%2018
0%20successful, the%20Chinese%20government%20and%20businesses.

118 See Michael Marge, Preparing Civilians to Travel, Live, and Work in Space: A Human Research Agenda, 10 NEW SPACE 240 (2022) (discussing the need for more research on civilian health as the commercialization of space grows); see also Bridget Balch, The Field of Space Medicine Lifts Off, AAMC (July 6, 2023), https://www.aamc.org/news/field-space-medicine-lifts (discussing new research opportunities of space medicine).


120 See, e.g., Bernardo Martinez Rocamora Jr. et al., Multi-Robot Cooperation for Lunar In-Situ Resource Utilization, 10 FRONT. ROBOT. AI 1149080 (2023) (“The long-term human presence on the Moon, as envisioned by the Artemis program, will require autonomous robotics technologies that support in-situ resource utilization (ISRU) in extraterrestrial environments. For example, extracting resources from the lunar soil, such as oxygen and water, will be vital to sustaining humans and building outposts for future missions.”).

121 Serkan Saydam & Andrew Dempster, The Next Gold Rush is Far, Far Away—and Closer Than You Think, UNSW NEWSROOM (Sept. 22, 2023) (“Obtaining valuable resources and minerals, even in extreme environments, has long been attractive to humans. We have a history of facing hazards in search of valuable resources. From the gold rush in the 1800s to the recent surge in space resources, humans have been willing to take risks to find and collect scarce and profitable materials . . . we’re on the edge of the next gold rush – but not on Earth . . . off-Earth mining is expected to begin in the next decade.”).

122 See, e.g., Donald Rapp & Vassilis J. Inglezakis, Mars In Situ Resource Utilization (ISRU) with Focus on Atmospheric Processing for Near-Term Application—A Historical Review and Appraisal, 14(2) APPL. SCI. 653 (2024).
infrastructure and a general welfare fund for laborers involved. It is not a coincidence that gaming has co-evolved alongside extractive industry. Just as gambling entertained miners in remote Western towns, it can support the wellbeing of crews during cislunar spaceflight, on the lunar surface, and someday Mars. The abundance of space promises a post-scarcity economy. Much sacrifice will be required, but for some, gaming will be the reminder of home that helps them pull through.

2. Public Health Rationale

Gaming in space has another benefit counseling for its adoption: the promotion of mental recreation in harsh and challenging conditions. Human activity and population dynamics are highly sensitive to weather, climate, and environment. The range of tolerability for humans is so narrow that, unaided by technology, our species could not survive on any other planet in our solar system. On balance, Earth is well-suited for human physiology and thermoregulation. And yet, even on the most hospitable planet in our cosmic neighborhood, there are environmental conditions severe enough to produce chronic and acute mental health pathologies, and drive human conflict. In fact, a dynamic climate with extreme weather events is linked to PTSD, depression, anxiety, and even suicidal ideation. For perspective, the Heat Index thresholds deemed “dangerous” and

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123 If the laborers are tribal members and/or the infrastructure is intended for the benefit of a tribe, then there is precedent on Earth for this concept. Distribution of gaming proceeds for the benefit of tribes is built into IGRA, specifically, and the spirit of Indian Gaming, generally. 25 U.S.C. § 2710(b)(2)(B) (“[N]et revenues from any tribal gaming are not to be used for purposes other than . . . (i) to fund tribal government operations or programs; (ii) to provide for the general welfare of the Indian tribe and its members; (iii) to promote tribal economic development; (iv) to donate to charitable organizations; or (v) to help fund operations of local government agencies;”). See generally National Indian Gaming Commission, Use of Net Gaming Revenues, No. 2022-4 (June 23, 2022), https://www.nigc.gov/images/uploads/bulletins/Bulletin_2022- Revised_Use_of_Revenue_Bulletin_-_FINAL_6_23_2022_%28002%29.pdf.

124 See Pavel Semerád, Asteroid Mining Tax as a Tool to Keep Peace in Outer Space, 65 SPACE POL’Y 101555, 3 (2023) (discussing the importance of taxation of terrestrial activities as a way to avoid conflict between countries).

125 See I.N. Rose, Gambling and the Law: The Third Wave of Legal Gambling, 17 JEFFREY S. MOORAD SPORTS L.J. 361, 370 (2010) (“Throughout the Wild West, gambling was ubiquitous. When the frontier developed, it was common to see casino games being played openly.”).

126 See, e.g., Paolo Cianconi et al., The Impact of Climate Change on Mental Health: A Systematic Descriptive Review, 11 FRONT. PSYCHIATRY 9 (2020).

127 Marshall Burke et al., Higher Temperatures Increase Suicide Rates in the United States and Mexico, 8 NATURE CLIM. CHANGE 723 (2018); Sárita Silveira et
“extremely dangerous” are 103°F, and 124°F, respectively.\textsuperscript{128} The risk of global mean temperature rising by 2°C in the next quarter century has been sufficient to fundamentally reshape industries, politics, and policy.\textsuperscript{129} Contrast this with the lunar surface where temperatures range from -233°C to 123°C over the course of its day-night cycle (which is ~29 Earth-days, versus Earth’s twenty-four hour cycle).\textsuperscript{130} What becomes of a species already struggling for homeostasis on Earth, during its first lunar night?\textsuperscript{131}

Variation within a climate has a degree of regularity, and with predictability comes the capacity to build adaptive technologies. However, discrete, extreme, weather events can uproot even the most established of civilizations. On Earth we have a long list of cataclysmic events ranging from avalanches to earthquakes, heat waves to hurricanes, tsunamis to volcanoes, \textit{et cetera}. Fortunately, natural disasters are not a persistent daily phenomenon in most regions. Likewise, we can reasonably expect that the list of known natural disaster categories will not grow much, if at all.\textsuperscript{132} In space, the list is longer and


\textsuperscript{131} Even on Earth—a hospitable planet—humans have historically clustered around a very narrow climate niche. Chi Xu, \textit{Future of the Human Climate Niche}, 117 \textit{PROC. NAT’L ACAD. SCI. U.S.A.}, 11350–11355 (2020). A similar population distribution strategy will not on its own be sufficient for humans to survive the environmental extrema elsewhere in our solar system.

\textsuperscript{132} In the near term, at least. The physics and geologic composition of Earth drive the natural disasters humanity experiences. These mechanisms are well characterized. It is unlikely for the physics experienced on Earth’s surface to change dramatically in an average human lifetime. Of course, human-made disasters may give rise to new categories, but humanity is not frequently on imminent alert for these types of events. Likewise, over larger time scales, asteroid impacts, solar expansion, \textit{et cetera} will expand the list of natural disasters considerably. Nonetheless, beyond the shelter of Earth’s magnetosphere, environmental risks are acute and frequent. See Lisa C. Simonsen \textit{et al.}, \textit{NASA’s First Ground-Based Galactic Cosmic Ray Simulator: Enabling a New Era in Space}
may never be fully written despite our best efforts. The sheer magnitude, variety, and frequency of life-threatening cosmic events in space is vast. And this is before one considers the impacts of prolonged isolation—one of the worst punishments available, and a documented cause of self-harm.\textsuperscript{133} For a Mars mission in particular, “radiation, altered gravity fields, hostile and closed environments, distance from Earth, and isolation and confinement” are expected to pose the most significant—but not the only—human health risks.\textsuperscript{134}

If and when technology enables humans to survive on other celestial bodies, (and while in transit to those bodies), quality of life becomes the fundamental constraint. The psychological issues for space voyages in general include emotional dysregulation, cognitive decline, disordered sleep, permanent visual disturbances, anorexia, and effects of structural changes in the brain.\textsuperscript{135} Hobbies, play, nutrition, relationships, community, art, and entertainment provide respite on Earth, and may well do the same for spacefarers. Early on, access to space will create a bottleneck that imposes limits on the full scope of in-person recreation and socialization. With limited cohorts and cargo storage, internet will be relied upon for connection both in a practical and a metaphysical sense. The choice of what to connect with will color one’s experience of space travel and habitation. Some will tune in to sermons, and others podcasts. Some will watch comedy specials, and others dramatic film. Others will call family and friends. Still others will crave direct two-way engagement with content and/or people—games. Among gamers, some will play “Diablo” without financial incentive, and others will stake their lot on Keno. The internet will deliver hope to these pioneers in different forms. Irrespective of the packaging, the substance of the hope inside will be much the same.

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\textsuperscript{133} See Louis Favril et al., \textit{Risk Factors for Self-Harm in Prison: A Systematic Review and Meta-Analysis}, 7 LANCET PSYCHIATRY 688 (2020) (study asserting that prison-related factors such as isolation leads to an increase in self-harm); see also Fatos Kaba et al., \textit{Solitary Confinement and Risk of Self-Harm Among Jail Inmates}, 104 AM. J. PUB. HEALTH 443 (2014).

\textsuperscript{134} See Patel et al., \textit{supra} note 132, at 2.

For a subset of the population, gambling is their favored delivery mechanism for hope regardless of where they find themselves. If the legality of post-terrestrial gaming is not yet determined, and a crew member should seek to connect to hope through wager, what are they to do? Are they any less of a pioneer for wanting to play Indian bingo? When anxiety, dread, and fear stand at the gateway of humanity’s most noble aspirations, a wager which delivers relief to a few, delivers triumph to us all. In the vacuum of space, access to wagers is a matter of public health. At the end of a day living and working within confined, cosmic-ray-shielded quarters, wagering on the Dallas Cowboys, or playing one’s favorite online slots becomes a profound act, an anchor to reality, a connection to the home planet.

3. Cost-Effectiveness

On a ship where every bit of weight counts, gaming is a cost effective mental health measure. Reusable rockets and additive manufacturing techniques are projected to drive down launch costs by orders of magnitude.136 However, launching a single kilogram to LEO still costs approximately $1,500.137 Commercial space remains too expensive for many companies to build stable business models. Fortunately, SpaceX continues developing its super heavy-lift launch vehicle (“Starship”), which will reduce the theoretical cost per kilogram of payload to cislunar orbit, the lunar surface and Mars. Starship is even projected to have a payload capacity reaching 150–250 metric tons.138 Regardless of Starship’s impact on prices though, mental-health preserving products and services for crewed missions, will be limited by payload capacity and price per kilogram. As businesses continue to optimize economic output from each kilogram of payload, online gaming’s ease of delivery and low mass

136 “Since SpaceX began flying the Falcon 9 rocket in 2009, the cost of launch per pound has decreased from $10,000 per kilogram to roughly $2,500. Starship promises to lower the cost of launch even further. Today, the per kilogram cost of a Falcon 9 launch is $1520. Starship’s larger size would allow it to drop that down by 40% to $970 on day 1[.].” When SpaceX achieves “a high-volume launch cadence with Starship” costs are likely to continue to decrease. As of 2023, a Starship launch costs an estimated $100 million. This figure is projected to drop to “$10 million within 2-3 years.” It is worth noting that “[t]he scientific and business case achievement of reducing launch costs by even 40%, let alone orders of magnitude, will have massive follow-on effects across the military, commercial, and civilian space enterprises.” Aidan Poling, T-minus 6 Seconds: Starship (and Humanity’s) Next Major Step into Space, GEO. SEC. STUD. REV. (Apr. 20, 2023).

137 Previously, payload costs were $65,000/kg to LEO. See Chris Daehnick et al., Space Launch: Are We Heading for Oversupply or a Shortfall, MCKINSEY & CO. (Apr. 17, 2023), https://www.mckinsey.com/industries/aerospace-and-defense/our-insights/space-launch-are-we-heading-for-oversupply-or-a-shortfall.

requirements make it an attractive service to provide in space. In principle, astronauts in LEO, GEO, on the lunar surface, and someday Mars, would be able to wager remotely from a mobile device without any additional payload mass requirements.

4. Novel Physics, Novel User Experience

The gaming environment in space would be vastly different than that of terrestrial casinos. There would also be considerable variation between different space-based venues. In orbital venues, players would be subject to microgravity and experience the phenomenon of weightlessness. On the lunar surface astronauts would be subject to approximately 0.16 times Earth’s gravity (1.625 m/s² versus 9.807 m/s²), and on the Martian surface, 0.38 times (3.711 m/s²).139 The potential for gaming software and hardware in space can be augmented by microgravity in a way that is practically inaccessible on Earth.140 In traditional analog games like Craps, players could release floating dice in microgravity rather than rolling them on a table. Similarly, the roulette wheel could be replaced with a sphere, allowing outcomes in three-dimensions. Sports and esports wagering enthusiasts could watch matches through augmented reality (“AR”) headsets while in microgravity, allowing for a fully immersive visual, auditory, tactile—and even vestibular—sensory experience. Interestingly, AR headsets are already in use aboard the ISS as a tool for assisting astronauts with complex tasks and research.141 Due to the cost of delivering mass to orbit, most gaming would be expected to be through a mobile device and/or an AR headset. The more elaborate hardware could potentially be manufactured on-site on another planetary surface. Finally, the mathematics of gambling itself could also be

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enhanced by novel random number generation mechanisms made feasible by the space environment.142

B. The Case for Indian Gaming in Space

Corporations are already formulating business models for a space economy whose utility architecture is rapidly developing.143 Yet, for tribes, full participation in Earth’s economy has not even been achieved. It is critical that solutions to tribal marginalization on Earth simultaneously anticipate the next frontier of tribal disenfranchisement. Fortunately, in the gaming context, proper framing of the problem produces a framework faithful to tribes throughout Earth and deep space. That is to say, the rift facing tribes is not between digital and physical activity, but rather terrestrial versus post-terrestrial. Understanding this subtlety would make for regulations versatile enough to obviate the need for litigation over a tribal sportsbook in Florida and on the International Space Station.

Where iGaming has threatened the current model of terrestrially constrained Indian Gaming, space-based gaming exposes a rare opportunity. Conceptualizing non-terrestrial gaming as inclusive of in-person and/or digital gaming from players both on Earth and in space increases the urgency for the federal government to update Indian Gaming statutes accordingly. Thus far, the conflict between IGRA and mobile wagering has motivated minimal reform. Instead, tribes have participated in iGaming as operators, not regulators, sacrificing the legally protected nexus between gaming and sovereignty upon which IGRA is premised. The birth of an unregulated post-terrestrial venue for gaming—space—exposes liabilities that are a call to action for legislators. Unifying all types of post-terrestrial gaming activities under the same policy goals restores Indian Gaming on Earth to what IGRA was supposed to guarantee and invites tribes into the space economy. Tribal integration in the space economy will accelerate definition of a universal sovereignty.

142 See generally Ayesha Reezwana et al., A Quantum Random Number Generator on a Nanosatellite in Low Earth Orbit, 5 COMM’N PHYSICS 3 (2022) (discussing a Quantum Random Number Generator); see also Johannes Handsteiner et al., Cosmic Bell Test: Measurement Settings from Milky Way Stars, 118 PHYSICAL REV. LETTERS 060401 (2017) (discussing an Optical Random Number Generator).
143 “Innovation has made it more cost effective to develop new space systems and launch payloads into space, which in turn has enabled a wider range of organizations to participate in the space sector.” For example, “SmallSats and CubeSats have particularly increased the interest of private companies and government agencies in investing in this field, as it allows for more affordable access to space and new business models, such as constellations[.]” John Coykendall et al., Riding the Exponential Growth in Space, DELOITTE (Mar. 22, 2023), https://www2.deloitte.com/us/en/insights/industry/aerospace-defense/future-of-space-economy.html.
C. Defining Post-Terrestrial Indian Gaming Law

Thus far, we have defined the venues for terrestrial Indian Gaming and Non-Terrestrial Indian Gaming to be Earth’s surface, and Earth-based digital networks, respectively. We now define Post-Terrestrial Indian Gaming ("PT-IG") as the placement and/or receipt of wagers beyond the Kármán Line.\(^{144}\) The approximate consensus on the altitude of the Kármán Line tends to oscillate within the range of 80–100 kilometers relative to mean sea-level.\(^ {145}\) Terrestrially, maritime law provides an analog to the fixed boundary at which post-terrestrial gaming laws would begin. For American gambling vessels—“Gambling Ships”—legal gambling can begin twelve nautical miles from the country’s coast.\(^ {146}\) There are of course material differences between a gambling ship in the high seas and a gambling ship in the vacuum of space. Importantly though, sovereignty is treated similarly in both contexts.\(^ {147}\)

Whereas terrestrial and non-terrestrial Indian Gaming are both defined by an upper-bound, post-terrestrial Indian Gaming is defined by a lower-bound. In other words, terrestrial and non-terrestrial Indian Gaming are self-contained under Earth’s atmosphere, and post-terrestrial Indian Gaming is inclusive of all space beyond it. It follows that a robust legal framework for post-terrestrial Indian Gaming must anticipate an impossibly large variety of potential gaming venues. To do so, we will categorize these venues into groupings which are likely to be practically meaningful in the coming decades of human space exploration.

On any relevant timescale, the principal venue types reachable by PT-IG will fit into the following groupings: Orbital, Interplanetary Space, Natural Satellite/Non-Planetary Body, Planetary Surface, and Multijurisdictional. Figure

\(^{144}\) There exists considerable debate in the aerospace community as to the exact demarcation of the Kármán Line. J.C. McDowell, The Edge of Space: Revisiting the Karman Line, 151 ACTA ASTRONAUTICA 668 (2018) (explaining how finding consensus on the altitude of the Kármán Line will be critical for maintaining national sovereignty as well as defining the applicability of air law and space law); see also Alexandra Harris & Ray Harris, The Need for Air Space and Outer Space Demarcation, 22 SPACE POL’Y 3 (2006); see also Bhavya Lal & Emily Nightingale, Where is Space? And Why Does That Matter?, 16 SPACE TRAFFIC MGMT. CONF. (2014).

\(^{145}\) See Cianconi, supra note 126.

\(^{146}\) 33 C.F.R. § 2.22 (“With respect to the United States . . . Territorial sea means the waters, 12 nautical miles wide, adjacent to the coast of the United States and seaward of the territorial sea baseline[].”); See generally 18 U.S.C. § 1082.

\(^{147}\) Art. 89, United Nations Convention on the Law of the Sea. (1982) (“No State may validly purport to subject any part of the high seas to its sovereignty.”); Art. II, TREATY ON PRINCIPLES GOVERNING THE ACTIVITIES OF STATES IN THE EXPLORATION AND USE OF OUTER SPACE, INCLUDING THE MOON AND OTHER CELESTIAL BODIES (January 27, 1967) (“Outer space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.”).
2 describes the venue examples within each category that will be established soonest. Although humanity may conceivably reach beyond our solar system someday, we will err on the side of pragmatism and restrict these categories to their examples within our solar system.

<table>
<thead>
<tr>
<th>Classification</th>
<th>First Accessible Example</th>
<th>Timeline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orbital</td>
<td>Low Earth Orbit (LEO)</td>
<td>Demonstrated 9/16/2021</td>
</tr>
<tr>
<td>Natural Satellite</td>
<td>Lunar surface (Cislunar internet transmission)</td>
<td>Late 2020s-2030s</td>
</tr>
<tr>
<td>(Non-Planetary Body)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interplanetary Space</td>
<td>Earth-Mars mission route</td>
<td>Early 2030s</td>
</tr>
<tr>
<td>Planetary Surface</td>
<td>Mars Surface network</td>
<td>Mid-2030s</td>
</tr>
<tr>
<td>Multijurisdictional</td>
<td>Earth to Mars internet transmission</td>
<td>2030s-2040s</td>
</tr>
</tbody>
</table>

Figure 2. Description of First Prospective PT-IG Venues

D. Proposed Amendments to IGRA

1. **Post-Terrestrial Tribal Gaming Act ("PTTGA")**

   Amend the title of the Indian Gaming Regulatory Act to “Post-Terrestrial Tribal Gaming Act” (PTTGA) to account for present and future expansion of non- and post-terrestrial Indian Gaming.

2. 25 U.S.C. § 2701

   1. §2701(3) is amended to read:
      (3) existing Federal law does not provide clear standards or regulations for the conduct of gaming on Tribal lands, over Tribal Networks, aboard Tribal Vessels, or within designated Tribal Activity Zones in space;

   2. §2701(5) is amended to read:
      (5) Indian tribes have the exclusive right to regulate gaming activity

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150 But see 25 U.S.C. § 2701 (representing the current text of the statute).
(i) on Indian lands if the gaming activity is not specifically prohibited by Federal law and is conducted within a State which does not, as a matter of criminal law and public policy, prohibit such gaming activity.  
(ii) over Tribal Networks if the gaming activity is not specifically prohibited by Federal law and is transmitted via servers physically located on Indian lands and/or satellites operated exclusively under tribal jurisdiction.  
(iii) aboard Tribal Vessels if operating under the flag of a federally recognized tribe, registered with the same as well as any appropriate space authorities under international law.  
(iv) within designated Tribal Activity Zones in space if the gaming activity is conducted in regions under the operational control of the tribe and not in violation of international law, and such gaming activities comply with the Outer Space Treaty and other applicable international agreements.

3. 25 U.S.C. § 2702151

1. §2702(3) is amended to read:  
(3) to declare that the establishment of independent Federal regulatory authority for gaming on Indian lands, the establishment of Federal standards for gaming on Indian lands, and the establishment of a National Indian Gaming Commission are necessary to meet congressional concerns regarding gaming and to protect such gaming as a means of generating tribal revenue.

4. 25 U.S.C. § 2703152

1. § 2703(11) is added:  
(11) The term “Tribal Networks” means—  
(A) all servers, satellites, computing clusters, telecommunication systems, and digital economic zones exclusively owned and/or operated by one or more Indian tribes—  
(i) and designated for covered gaming activity,  
(ii) including wagers transmitted by players physically located within or outside of Indian lands.

2. § 2703(12) is added:  
(13) The term “Tribal Vessel” means—  
(A) any spacecraft, space station, or other space-faring vehicle that—

(i) operates under the flag of a federally recognized tribe and owned, leased, or operated by the same tribe to whom the flag belongs
(ii) or is licensed by the National Indian Gaming Commission (NIGC) for the administration of such gaming activity

3. § 2703(13) is added:
   (13) The term “Tribal Activity Zones in space” means—
   (A) designated zones where one or more Indian tribes possess operational control and/or self-regulatory authority
   (i) beyond the Kármán Line in—
      (I) an Earth Orbital venue such as Geostationary orbit (“GEO”), low Earth orbit (“LEO”), Medium Earth orbit (“MEO”), Sun-synchronous orbit (“SSO”), Geostationary transfer orbit (“GTO”), a Lagrange point, or
      (II) Cislunar space including Low Lunar Orbit (“LLO”), or
      (III) aboard a launch vehicle in Interplanetary space, or
      (IV) within Mars orbit, or
      (V) below, at, or above, the surface of Mars, or
      (VI) orbit around any other celestial body, or
      (VI) below, at, or above any other planetary surface, and such zones operate under agreements recognized by international space law bodies.

5. 25 U.S.C. § 2706

1. § 2706(b)(11) is added:
   (11) shall coordinate with appropriate government agencies to monitor gaming activity conducted in Tribal Vessels or Tribal Activity Zones in space, and inspect the premises of such activity.

6. 25 U.S.C. § 2710

1. §2710(a)(3) is added:
   (3) Any class II gaming relayed over Tribal Networks or conducted in Tribal Vessels or Tribal Activity Zones in space shall be within the jurisdiction of the Indian tribes and subject to the provisions of this Act.

2. § 2710(b)(1) is amended to read:

(1) An Indian tribe may engage in, or license and regulate, class II gaming on Indian lands, over Tribal Networks, aboard Tribal Vessels, and within Tribal Activity Zones in space within such tribe’s jurisdiction, if--

§ 2710(b)(1)(B) is amended to read:

(B) [. . .] A separate license issue by the Indian tribe shall be required for each
(i) place, facility, or location on Indian lands,
(ii) server site or satellite constellation comprising a Tribal Network,
(iii) station, spacecraft, or fleet of Tribal Vessels
(iv) zone, orbit, planetary, or non-planetary surface(s), within Tribal Activity Zones in space.

4. §2710(b)(1)(C) is added:

(C) such Indian Gaming activity is transmitted exclusively through a Tribal Network.

5. §2710(b)(1)(D) is added:

(D) such Indian Gaming activities are conducted in accordance with a framework that respects international space law, including the Outer Space Treaty.

6. §2710(f) is added:

(f) Licensing of Tribal Vessels
(i) The Chairman of the National Indian Gaming Commission shall have the authority to issue licenses for the conduct of Class III gaming activities on spacecraft not operating under the flag of a federally recognized Indian tribe, provided that such activities are not in violation of international law.
(ii) The Commission shall prescribe regulations for the application process, conduct, and regulation of gaming activities on licensed Tribal Vessels including—

(I) Application procedures
(II) Standards for approval of licenses
(III) Allowable games and equipment standards
(IV) Enforcement protocols
(V) Criteria and procedures for suspension and revocation
(VI) Fees
(iii) Licensed Tribal Vessels must comply with international law and the regulations prescribed by the Commission.
7. 25 U.S.C. § 2711\textsuperscript{155}

§2711 is to be amended generally to include provisions relating to the hazards in the space environment as well as compliance with applicable international law.

8. 25 U.S.C. § 2719\textsuperscript{156}

§2719(b)(2)(C) is added:
(C) regions within Tribal Activity Zones in space.

E. From Gaming to the Space Economy

Wherever humanity goes, we carry with us artifacts of the human experience. In the coming decades we will face the choice of what impulses, values, and traditions we export to space. In increasingly subtle ways, the private sector has already begun opining on the matter. Within the Terms and Conditions for Starlink—SpaceX’s satellite internet division—the “Governing Law” section asserts:

For Services provided to, on, or in orbit around the planet Earth or the Moon, this Agreement and any disputes between us arising out of or related to this Agreement, including disputes regarding arbitrability (“Disputes”) will be governed by and construed in accordance with the laws of the State of California in the United States. For Services provided on Mars, or in transit to Mars via Starship or other spacecraft, the parties recognize Mars as a free planet and that no Earth-based government has authority or sovereignty over Martian activities. Accordingly, Disputes will be settled through self-governing principles, established in good faith, at the time of Martian settlement.\textsuperscript{157}

To be sure, the vision of a free and self-governing settlement on Mars is profoundly inspiring, and corporations have much to learn from SpaceX’s optimism for humanity’s future. But as compelling as this description may be, it is borne of the experience of a twenty-one-year-old private company. In America, we have the good fortune of living amongst Indian nations whose

\textsuperscript{155} But see 25 U.S.C. § 2711.
\textsuperscript{156} But see 25 U.S.C. § 2719.
collective generational wisdom spans tens of thousands of years. American Indian tribes have a unique and important voice that is no less relevant beyond the home planet. Regulated Indian Gaming in space—regardless of market size initially—provides a direct contact point for tribes with the in-space economy. It also reserves a spot for tribes within the growing space economy. Through administering Indian Gaming in space, tribes would develop in-house expertise on space law and policy, allowing them to become a fixture within the space economy. Once tribes gain a foothold there, they can keep up with—and likely outpace—other sovereigns cementing for themselves a permanent voice in the debates over space exploration and resource utilization. As more industries emerge within the space economy, tribes will be well-positioned to participate as regulators and/or operators beyond gaming if they wish. Simply put, gaming is a direct on-ramp for tribal wisdom to be exported to the space economy.

VII. TOWARDS A DOCTRINE OF POST-TERRESTRIAL TRIBAL RIGHTS

Post-terrestrial tribal sovereignty, even if vestigial (i.e., not exercisable in space due to the Outer Space Treaty), will be mission critical for tribes to be seen as legitimate actors in space policy and governance. This section respectfully undertakes an objective analysis of the opportunities and challenges ahead, as the post-terrestrial economy matures. Whether tribes wish to participate in the space economy is a matter of values for each tribe to decide. Some American Indian traditions reveal a posture toward space exploration that, at times, diverges from NASA and the private sector. A recent example of this tension can be seen in the Navajo (Diné) Nation’s objection to lunar space funerals that had been planned for the Peregrine mission in January 2024. In a statement, Navajo president Dr. Buu Nygren explained:

The sacredness of the moon is deeply embedded in the spirituality and heritage of many Indigenous cultures, including our own. The placement of human remains on the moon is a profound desecration of this celestial body revered by our people. This act disregards past agreements and promises of

159 See generally Tony Milligan, From the Sky to the Ground: Indigenous Peoples in an Age of Space Expansion, 63 SPACE POL’Y 101520 (2023); see also Ciara Finnegan, Indigenous Interests in Outer Space: Addressing the Conflict of Increasing Satellite Numbers with Indigenous Astronomy Practices, 11 LAWS 26 (2022).
respect and consultation between NASA and the Navajo Nation, notably following the Lunar Prospector mission in 1998.\textsuperscript{161}

It is important to note that the Navajo were not opposing NASA’s commercial lunar payload services flights. Rather, the Tribe simply requested consultation regarding the act of placing non-NASA payloads with human remains on another celestial body.\textsuperscript{162} The broader lesson here is that indigenous cultures and writings do not necessarily oppose space exploration altogether, but instead prescribe behavioral standards fostering harmony and warning against colonization and exploitation.\textsuperscript{163}

In general, NASA’s tribal forums and listening sessions are certainly a start, but they are insufficient to fulfill the United States’ stated tribal consultation goals.\textsuperscript{164} Of course, neither tribal philosophy, nor forum comments, are policy. However, they are fragments of the robust tribal counternarratives to be considered and thoughtfully debated. The right to have those debates must not be curtailed by a lag in acknowledging inherent post-terrestrial sovereignty. Practically speaking, it is unlikely that domestic-dependent sovereignty will be upgraded to the status enjoyed by foreign sovereigns. However, just as Indian Gaming can be reformed with post-terrestrial updates, tribal sovereignty may be amenable to similar treatment. Tribal sovereignty will need to be reimagined to support tribal innovation and participation in new and shifting economies. The

\begin{flushleft}
\textsuperscript{161} Id.
\textsuperscript{162} Id. ("I stand by the position that both NASA and the USDOT should have conducted consultations with Indigenous tribes before contracting with or issuing payload certificates for missions that involve the transport of human remains to the moon.").
\textsuperscript{163} Id. ("The Navajo Nation is not opposed to scientific progress or space exploration."). See generally M. Jane Young, “Pity the Indians of Outer Space”: Native American Views of the Space Program, 46 W. FOLKLORE (NO. 4) 269, 272 (1987). For context, best practices are especially needed since the World Heritage Convention does not protect the moon or other regions in space. A state would require sovereign territory in space to designate it for protection, but as of now, such territorial claims are not allowed. Art. 3. Convention Concerning the Protection of the World Cultural and Natural Heritage, UNESCO (Nov. 16, 1972) (“It is for each State Party to this Convention to identify and delineate the different properties situated on its territory mentioned in Articles 1 and 2 above.").
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arguments that follow are humbly offered in service of those tribes who may wish to try.

A. UNDRIP As a Basis for Tribal Authority in Space Policy

The world’s nation states have long understood that space exploration would pressure-test “territorially oriented” models of sovereignty. This is turning out to be true in an era where the great economic powers operate in digital and off-world domains. Space law, and international law, are adapting to this new reality, but U.S. Federal Indian Law is not. As digital and space commerce account for an increasing proportion of economic output, sovereigns governed by laws written for analog commerce are severely disadvantaged. Such is the predicament of American Indian tribes, domestic-dependent sovereigns with entirely analog laws. While the Outer Space Treaty severely restricts the exercise of sovereignty in space, post-terrestrial tribal sovereignty is a precursor to recognition by space faring nations in matters of space governance and policy.

On September 13, 2007, the United Nations General Assembly adopted the United Nations Declaration on the Rights of Indigenous Peoples (“UNDRIP”). After initially voting to reject it, the United States officially endorsed the Declaration in December of 2010. UNDRIP does not have the legal force of a treaty, per se, but it is a strong statement of principle in favor of tribal self-determination.

Article 5 of UNDRIP reads:
Indigenous peoples have the right to maintain and strengthen their distinct political, legal, economic, social and cultural institutions, while retaining their right to participate fully, if

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166 See Art. II, TREATY ON PRINCIPLES GOVERNING THE ACTIVITIES OF STATES IN THE EXPLORATION AND USE OF OUTER SPACE, INCLUDING THE MOON AND OTHER CELESTIAL BODIES (Jan. 27, 1967).
169 Kevin Gray, Change by Drips and Drabs or No Change at All: The Coming UNDRIP Battles in Canadian Courts, 11 AM. INDIAN L. J. 2, 5 (2023).
they so choose, in the political, economic, social and cultural life of the State.170

Article 19 continues:
States shall consult and cooperate in good faith with the indigenous peoples concerned through their own representative institutions in order to obtain free, prior and informed consent before adopting and implementing legislative or administrative measures that may affect them.171

Without a clearly defined status in outer space, tribes are denied their right to “participate” in, or “consent” to, policy decisions affecting the largest economic frontier ever accessible to humanity. Outer Space Treaty signatories entered into the agreement with the explicit “Belie[ff] that the exploration and use of outer space should be carried on for the benefit of all peoples irrespective of the degree of their economic or scientific development”.172 Today, the exploration and use of space does not benefit indigenous peoples. It is therefore not possible to reconcile UNDRIP and the Outer Space Treaty.

Unfortunately, the barriers to entry for tribes to be recognized as authoritative participants in space policy are steep. Likewise, making the case for inherent rights in space is difficult without land or history upon which to base it. Therefore this will likely have to proceed from legislation. To that end, a post-terrestrial reinterpretation of IGRA—the PTTGA—was offered as a model of best practices for statutory drafting. Legislators who support post-terrestrial tribal rights may look to the statute as a terrestrially neutral template for amending U.S. Federal Indian Law generally. For Federal Indian policy goals to be served, U.S. Federal Indian Law must be written to be agnostic to the prevailing economic venues of any given era. Since it remains ossified in outdated conceptions of economics, it can no longer fully serve federal policy in an era of post-terrestrial economics. Recognition of an inherent right to post-terrestrial sovereignty—by any name—will therefore serve a critical role in faithfully executing UNDRIP’s directives.

Fortunately, there exists considerable scholarship on the topic of non-terrestrial Indian sovereignty, usually under the banner of digital sovereignty, online sovereignty, data sovereignty, data governance, network sovereignty, spectrum sovereignty, or some combination thereof.173 The trouble is that none.

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171 Id. at Art. 19.
173 For “digital sovereignty”—Traci Morris, Indigenous Digital Sovereignty Defined, ASU AM. INDIAN POL’Y INST. (July 14, 2023)
of these classifications anticipate the full scope of tribal sovereignty that will be required for tribal economic development to continue as commercial space evolves. A post-terrestrial sovereignty would accurately describe tribal sovereignty in cyberspace (non-terrestrial) and in outer space. Post-terrestrial vocabulary enables preemptive legislating rather than the reactive status quo of revisiting the contours of sovereignty each time it is strained by a new economic frontier.

Space exploration and resource prospecting are areas with potentially unbounded economic impact. Compliance with UNDRIP’s recommendations should mean that tribes are allowed to “participate fully” in the space economy and be consulted as space law develops. At the time of this writing, there are no obvious pathways to tribal participation in the space economy, and consultation on matters of space policy is limited and rare.

B. The Growing Cost of Exclusion from the Post-Terrestrial Economy

On January 24, 1848, at Sutter’s Mill, James Wilson Marshall came upon “some kind of mettle […] in the tail race that look[ed] like goald[.]” The “goald” flakes found that day near the South Fork of the American River catalyzed the large-scale settlement of the American West. One hundred and
seventy-five years later, Trans Astronautica Corporation’s Sutter Telescopes hold a similar promise as they map the asteroids and advance the cause of space resources. Wherein, generations past, prospecting was limited to the resources available on Earth, space exploration technology—and policy—will soon enable resource utilization in space (so-called In Situ Resource Utilization). The value of precious metals and other resources in a few asteroids alone, could be orders of magnitude larger than that of the entire mass of gold excavated during the course of known human history. The rate limiting step is returning these resources to Earth, which is one reason markets for use of resources in space are attractive. The concentrations and cost of accessing these resources also limit the viability of returning large masses to Earth. However, platinum group metals such as rhodium may be at sufficiently high concentration creating new economies and societies in the process. Once word spread back East of the discovery of gold in California, tens of thousands of men began streaming west[.]


179 See How Much Gold Has Been Found in the World?, U.S. GEOLOGICAL SURV., https://www.usgs.gov/faqs/how-much-gold-has-been-found-world. (The USGS estimates that “[a]bout 244,000 metric tons of gold has been discovered to date (187,000 metric tons historically produced plus current underground reserves of 57,000 metric tons).” Even assuming a constant historical premium price per troy ounce of ~$2180 (a vast overestimate), and counting underground reserves (a further overestimate), the value of all gold mined in history would be on the order of ~$17 Trillion.). See generally Jamie Carter, NASA’s ‘Psyche’ Mission to Quadrillion-Dollar Asteroid is Go, FORBES, (July 19, 2023, 7:15 PM), https://www.forbes.com/sites/jamiecartereurope/2023/07/19/nasas-psyche-mission-to-multi-quadrillion-dollar-asteroid-isgo/?sh=2bdd2b4a39df#:~:text=Its%20unusual%20composition%20of%20iron,be%20worth%20about%20%202%20410%20C000%20quadrillion.
such that it would be economically justified to supply the Earth-based market from space.  

Remarkably, startups are now finding success raising seed capital on the promise of returning resources to Earth.\(^{181}\) For example, Interlune has raised $18 Million with the promise of “extracting and transporting lunar Helium-3 back to Earth for use by commercial and government customers in national security, quantum computing, medical imaging, and fusion energy markets.”\(^{182}\) Estimates suggest that there are at least one million tons of Helium-3 isotopes at accessible depths on the lunar surface.\(^{183}\) As a rare isotope on Earth, Helium-3 may prove to be among the first space resources returned to Earth profitably.\(^{184}\)

A space resource is “an abiotic resource \textit{in situ} in outer space” defined to include “water and minerals.”\(^{185}\) Space resource utilization—often colloquially confused with “space mining”—will be an essential component of any permanent civilization in space.\(^{186}\) For prolonged human survival beyond Earth, we will have to source nutrients, oxygen, potable water, construction

\(^{180}\) On Earth, a single kilogram of rhodium can be valued on the order of hundreds of thousands of U.S. dollars. See Kevin M. Cannon et al., \textit{Precious and Structural Metals on Asteroids}, 225 \textit{PLANETARY AND SPACE SCI.}, 1, 1–2 (2023).


\(^{182}\) Id.


\(^{184}\) Eric Berger, \textit{A Startup Will Try to Mine Helium-3 on the Moon}, WIRED, (Mar. 15, 2024), https://www.wired.com/story/interlune-helium-3-moon-mining/ (“There are customers that want to buy it today.”).


\(^{186}\) Space mining is only one type of space resource utilization. Capturing atmospheric gases, growing plants locally, collecting solar radiation with photovoltaics, and even recycling derelict space craft are other examples of space resource utilization that don’t involve “mining”, \textit{per se}. For a review of the breadth of space resources. See Alexandre Meurisse & James Carpenter, \textit{Past, Present and Future Rationale for Space Resource Utilization}, 182 \textit{PLANETARY AND SPACE SCI.}, 1, 1 (2020).
materials, and propellant on-site (“in situ”). A sovereign that is unable to legally operate in the domain of space resources will lose the economic value of these resources brought to market on Earth, as well as the ability to self-sustain its citizens in space. A similar story has played out in the energy sector on Earth’s surface where tribes have not benefited proportionally to the abundant resources right below their feet.

Space resources have the potential to unify all sovereigns around a common cause for the benefit of humanity. Collaborating with the world’s nation states, as coequal sovereigns, on matters of space exploration, would challenge the idea of tribes as mere domestic dependent nations. Such a clear demonstration of planetary stewardship could and should accelerate a universal definition of tribal sovereignty.

C. Reconceptualizing Tribes as Full Economic and Regulatory Participants

Whether IGRA is amended or not, the transition to a post-terrestrial economy is a call for the U.S. federal government to demonstrate renewed commitment to American Indian tribes. As recently as January 2021, the White House reaffirmed its commitment—on paper—to “fulfilling Federal trust and treaty responsibilities to Tribal Nations” and to “honoring Tribal sovereignty and

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188 “Standing in stark contrast to the challenges reservation communities face is the opportunity to access the trillions of dollars of natural resources found on their sovereign lands. Unfortunately, structural, political, and regulatory barriers have made it difficult for tribes to take advantage of development opportunities, combined with the paternalistic policies of the Federal government towards tribes continue to make self-determination and tribal sovereignty an uphill battle in terms of resource development.” Bazilian, *supra* note 30.

including Tribal voices in policy deliberation that affects Tribal communities.\textsuperscript{190} Like terrestrial tribal sovereignty, post-terrestrial sovereignty begins as law and finds expression in self-regulation, governance, policy-making, and economic self-determination. Amending extant statutes (e.g., IGRA) or drafting new ones would be a sensible place to start. UNDRIP can be invoked as justification. Article 20 provides:

\begin{quote}
Indigenous peoples have the right to maintain and develop their political, economic and social systems or institutions, to be secure in the enjoyment of their own means of subsistence and development, and to engage freely in all their traditional and other economic activities.\textsuperscript{191}
\end{quote}

Terrestrial statutes did a satisfactory job of fulfilling the promises eventually codified in Article 20, but no longer do so in the digital age. As non-terrestrial commerce outpaces the statutes of U.S. Federal Indian Law, the lost opportunities for tribes have been substantial and continue to accumulate. It is an opportune moment for legislators to prevent the same thing from happening when the post-terrestrial economy matures. The substance of a renewed commitment to tribes ought to parallel the themes embodied in the Artemis Accords to create parity with other sovereigns.\textsuperscript{192} Initially, tribal consultation on the direction of the space economy would provide natural pretext for these conversations.

Tribal consultation is a matter of policy for the U.S. federal government on matters with “tribal implications.”\textsuperscript{193} Executive Order 13175 defines that criteria as follows:

\begin{quote}
(a) Policies that have tribal implications’ refers to regulations, legislative comments or proposed legislation, and other policy statements or actions that have substantial direct effects on one
\end{quote}

\begin{itemize}
\item \textsuperscript{193} See Consultation and Coordination with Indian Tribal Governments, 65 Fed. Reg. 67249, 67249–67250 (Nov. 6, 2000).
\end{itemize}
or more Indian tribes, on the relationship between the Federal Government and Indian tribes, or on the distribution of power and responsibilities between the Federal Government and Indian tribes.\textsuperscript{194}

The Order then invokes terrestrial sovereignty, recognizing that “Indian tribes exercise inherent sovereign powers over their members and territory.”\textsuperscript{195} Clearly, there is no Indian “territory” in space, and so consultation requirements for matters in space would have to flow from sovereign power over “members.” Until pathways for tribal access to the space economy have been formalized, space regulatory decisions that neglect to do so certainly produce “tribal implications” through that omission.

The standard of consultation is then elaborated on in Section 5: (a) Each agency shall have an accountable process to ensure meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications. [...] (b) To the extent practicable and permitted by law, no agency shall promulgate any regulation that has tribal implications, that imposes substantial direct compliance costs on Indian tribal governments [...] unless: [...] (2) the agency, prior to the formal promulgation of the regulation, (A) consulted with tribal officials early in the process of developing the proposed regulation.\textsuperscript{196}

Although there are no direct compliance costs \textit{per se} for tribes under the current aerospace regulations, there are substantial lost economic opportunities from broader stakeholder compliance with regulations that lack tribal accountability.

The private sector now drives progress in aerospace, and a self-sustaining in-space economy is expected.\textsuperscript{197} America’s space agency, NASA, has initiated consultation with tribes, but not in ways that directly influence the trajectories of its major programs. For example, on January 11, 2023, NASA hosted a “virtual forum and listening session with tribal leaders and

\textsuperscript{194} Id. at 67249. \\
\textsuperscript{195} Id. \\
\textsuperscript{196} Id. at 67250. \\
representatives.”198 The stated goal of the forum was to “begin a conversation with federally recognized tribes, and to solicit feedback on how NASA can enhance its consultation process and its engagement in areas of potential shared interests.”199 After hearing from fifteen tribes, some common sentiments that emerged were:

- “limited familiarity with NASA’s work […] and consultation activities with tribal nations”;
- “Science, Technology, Engineering, Mathematics ("STEM") partnerships and educational opportunities”;
- “access to NASA data for […] tribal research projects”, “small business opportunities”;
- “skepticism”;
- “appreciation of NASA’s support”; and
- “ideas for NASA’s consultation process with tribes.”200

This was an important start, to be sure. However, the difference between NASA’s relationship with foreign nation states compared to domestic sovereign nations is striking. At the same time as our country’s space agency was holding information sessions with tribes, historic bilateral treaties—the Artemis Accords—were being signed with foreign sovereign nations.201 The Accords are accelerating international agreement on standards for peaceful exploration and resource extraction in space. They even have the power to unite sovereigns in

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199 *Id.*
200 *Id.*
formulating legal definitions as profound as property rights for “nations engaging in mining activities on the moon,” to name just one.\textsuperscript{202}

In contrast, looking at the scope of the tribal forum, the best that domestic dependent sovereigns might hope for are STEM programs and small business grants. Ironically, in June 2023, months after American Indians were granted their virtual forum, the Republic of India became the twenty-seventh signatory of the Artemis Accords.\textsuperscript{203} Reading the contents of the Artemis Accords reveals just how deprioritized domestic-dependent terrestrial sovereigns truly are. As the roster of signatories grows, U.S. Federal Indian Law must be adjusted to realign with federal policy. In an era when other sovereigns frequently convene on consequential aerospace matters—without tribal delegations present—tribal participation must be a matter of public policy. The process of realignment ought to begin with dialogue as fellow sovereigns on core agency programs. As experts in heavily regulated industry, tribes would be valued regulatory participants in this context.

In terms of practical steps that can be taken, gaming is the most natural on-ramp for tribes as regulatory participants in the space economy, at least initially. There is no doubt that IGRA has given expression to tribal sovereignty on Earth, but absent post-terrestrial tribal rights, it cannot in its present form do the same in space. As the consequences of IGRA’s decay in the non-terrestrial economy intensify, and the post-terrestrial economy looms, nothing less than post-terrestrial tribal sovereignty will do. To be sure, just as gaming has profited the general population and tribal citizens, recognizing Indian nations as broader regulatory participants would benefit both tribal and non-tribal constituents. Once post-terrestrial tribal rights are fully exercised, regulatory clarity on gaming in space for commercial operators will also follow. Post-Terrestrial Indian Gaming will cement tribal self-determination on Earth, in the airwaves, and into the cosmos—for the benefit of humanity.

VIII. CONCLUSION

Expressions of tribal sovereignty continue to be predicated on association with land. Yet most industries—notably gaming—are transitioning from terrestrial to non-terrestrial, and post-terrestrial, business models. Post-terrestrial economies are composed of a blend of non-terrestrial and off-world


\textsuperscript{203} The Republic of India Signs the Artemis Accords, U.S. DEP’T OF STATE (June 24, 2023), https://www.state.gov/the-republic-of-india-signs-the-artemis-accords/#:~:text=In%20a%20ceremony%20held%20at,sustainable%20and%20transparent%20space%20activity.
products and services. Non-terrestrial economic activities are those conducted over the internet, and post-terrestrial commerce is practically limited for now to orbital commerce.\textsuperscript{204}

Terrestrial statutes are proving to be highly inflammatory whenever tribes rightfully attempt to participate (and self-regulate) in a non-terrestrial or post-terrestrial economy. Unfortunately, there exists no legal basis for non-terrestrial and post-terrestrial tribal sovereign participation in the United States. Indian Gaming provides an urgent case study of this phenomenon, as it is a critical engine of tribal economic development governed by a terrestrial statute. IGRA has rendered Indian Gaming an expression of exclusively terrestrial sovereignty. The statute therefore has the effect of barring tribes from non-terrestrial and post-terrestrial expressions of sovereignty. This tension is not purely academic, but rather has the force to spontaneously shut down a sportsbook even after a compact has been successfully negotiated. The litigation over Florida’s now defunct Hard Rock Sportsbook foreshadows further uncertainty as terrestrally-locked statutes depart from economic reality.

Similarly, the first wager from outer space (post-terrestrial) provides new vocabulary with which to debate the fitness of IGRA to survive “post-terrestrial” wagers originating from mobile phones outside of reservation lands. As a land-locked statute, it is not clear how IGRA’s terms (which are terrestrally-locked) would apply to this sort of post-terrestrial gaming. Collisions with the Wire Act and state law have further limited the statute’s application. Inter-tribal economic disparities are deepening as resource-rich tribes purchase commercial gaming operations, and others wrestle with a statute that no longer serves its stated policy goals. Accessible, self-regulated, non-terrestrial gaming operations would provide resource-light tribes the ability to build technological infrastructure and expertise that could be generalized to other industries. The arguments deployed for tribal sports betting have been helpful in exploring the nature and limits of sovereignty in non-physical spaces. Long term, however, an amendment to IGRA will be necessary to preserve and expand tribal sovereignty as expressed through gaming. Thoughtfully amending IGRA would free tribes to lead the way in the regulation of gambling in space—where any gaming activity would, by definition, be off-land.

Gaming is the most immediate opportunity for tribes to become active in the aerospace industry, but it is not the only one. Space, like gaming, is among the most extensively regulated sectors. Given their expertise in highly regulated industries, tribes ought to be viewed as expert regulatory participants in gaming and beyond. As the Congress resists transitioning IGRA to the modern gaming landscape, American Indian tribes continue to exemplify the innovative and forward-looking mindset of our technological era. Gaming is simply ground zero for a trans-terrestrial bottleneck that is filtering tribes out of twenty-first century prosperity. The U.S. federal government has explicitly outlined its commitment to tribal consultation and economic development. Post-terrestrial sovereignty will test this commitment. American Indian tribes are no less sovereign off-world.