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National Appropriation of Outer Space and State Jurisdiction to Regulate the Exploitation, Exploration and Utilization of Space Resources

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A. Introduction

The relationship between the exploitation of natural resources of outer space and the ban on national appropriation of outer space has two dimensions. The first and most commonly addressed dimension relates to the perennial question of how to determine the scope of the non-appropriation principle as either including or excluding natural resources of celestial bodies, and the impact this may have on the activity of exploitation. The second dimension concerns the implications of the limitations posed by the non-appropriation principle on the exercise of State jurisdiction in outer space, in particular the prescriptive jurisdiction to legislate on issues that may be deemed left unresolved by international space law. We shall endeavour to discuss both in the timeframe of this paper.

B. Implications of Article II OST for the Exploration, Exploitation and Utilization of Natural Resources

If one is confronted with the question on whether or not and in how far international space law allows for the national appropriation of resources, one must certainly first refer to Art. II of the Outer Space Treaty.¹ This provision is the central provision in international space law. It characterizes outer space as an international common² which cannot be appropriated by any country. With this it describes certain means of unpermitted appropriation: “by claim of sovereignty, by means of use or occupation or by any other means”. Thereby it is uncontested that appropriation “by claim of sov-

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1 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies (opened for signature 27 January 1967, entered into force 10 October 1967), 610 UNTS 2015 (hereinafter referred to as ‘Outer Space Treaty’ or ‘OST’).

2 See for a general account on common spaces outside national jurisdiction: *Wolfrum*, Die Internationalisierung Staatsfreier Räume, in: Veröffentlichungen des Max-Planck-Instituts für ausländisches öffentliches Recht und Völkerrecht, Band 85, Berlin/Heidelberg 1984.

ereignty” is not allowed.³ Accordingly, the American flag on the Moon does not mean that the Moon is the 51st State of the United States as it only has symbolic character. International space law thus prohibits any taking of property of areas either in outer space (e.g. through orbital slots⁴) or on celestial bodies.

Unclear is the exact scope of the other means mentioned in Art. II OST, such as the means of use or “any other means”.⁵ Here the international discussion follows different paths.

There is one very strict opinion saying that as is expressed in Art. II any kind of use, thus also the use by taking of resources, is prohibited.⁶ The rationale behind this

3 The legal framework for all international common spaces contains such a distinction. Prohibition of sovereignty claims to the Antarctic are to be found in Art. IV of the 1959 Antarctic Treaty and its 1998 Protocol; to the Area and its resources in Art. 137 para. 1 of the 1982 United Nations Convention on the Law of the Sea; and regarding outer space and celestial bodies we can see this in Art. II OST which is reinforced by Art. 11 para. 2 for the Moon and in Art. 11 paras. 3, 5, 6 and 7 of the 1979 Moon Agreement for its natural resources. For an extensive commentary on the non-appropriation principle in space law, see *Freeland/Jakhu*, ‘Article II’, in: *Hobe/Schrogl/Schmidt-Tedd (eds.)*, *Cologne Commentary on Space Law: Volume 1 Outer Space Treaty* (2009).

4 Due to the specificity that objects in the Geostationary orbit (GEO) have an orbital period equal to the Earth’s rotational period and can be thus “seen” from the Earth 24 hours a day, the GEO is considered a limited natural resource. This classification has been extended to all orbits associated with radio frequencies used by satellites in outer space, see the wording of Art. 44 para. 2 of the ITU Constitution (done 12 August 1992, entered into force 1 July 1994), as amended, 1825 UNTS 331: “in using frequency bands for radio services, Member States shall bear in mind that radio frequencies and any associated orbits, including the geostationary-satellite orbit, are limited natural resources and that they must be used rationally, efficiently and economically, in conformity with the provisions of the Radio Regulations, so that countries or groups of countries may have equitable access to those orbits and frequencies, taking into account the special needs of the developing countries and the geographical situation of particular countries.”

5 While Art. I para. 1 OST provides for the free ‘exploration and use’ of outer space as the ‘province of all mankind’, there are some limitations to the uses of outer space, maintained mainly by Art. II, IV, VI, VII, VIII and IX OST. The meaning of the term ‘occupation’ is uncontested as not compatible with the *res communis* nature of outer space, see *Freeland/Jakhu*, *supra* note 3, marginal note 40.

6 *Jenks*, *Space Law* (1963), p. 201; *M. Lachs* on the meaning of the prohibition of ‘national appropriation’ as inclusive of both sovereign rights and private property rights as cited in: *Christol*, Article 2 of the 1967 Principles Treaty Revisited, IX *Annals of Air and Space Law* (1984), pp. 217-218; *Gorove*, *Limitations of the Principles and Exploration and Use in Outer Space: Benefits and Interests*, in: *Proceedings of the XIII Colloquium on the Law of Outer Space* (1970), p. 74.

would be that the Outer Space Treaty prohibits any kind of exclusive rights⁷ to outer space and celestial bodies and it thus designates and characterizes outer space as an international common.⁸ Others, and this seems to be the majority, maintain that Art. II OST is less clear. They hold that in order to solve the conflict between the explicit permission of using outer space (also commercially⁹) as contained in Art. I, para. 2 of the Outer Space Treaty on the one hand, and the prohibition of appropriation of territory (including orbital slots) on the other hand, one should more or less limit the prohibition to the taking of territory¹⁰ and thus to leave it somewhat open. This opinion maintains that the provision as formulated in Art. II OST is unclear – and consequently, it could not be considered to be an explicit prohibition as it does not, in an explicit way, formulate a ban on certain uses. And because there is, some might argue, a rule in international law stating that what is not explicitly prohibited is allowed,¹¹ such kind of taking of resources could, if one follows this opinion, arguably be allowed (see, however, *infra* Section C). But also this view must be taken with uttermost care. If one reads more properly the permission on the exploration and use of outer space and the celestial bodies in Art. I of the Outer Space Treaty, one sees very clearly that this is not an unlimited freedom but a freedom which is put under certain conditions.¹² It shall, as has been the discussion for many years, be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific

7 For an extensive overview of the meaning and the interpretation of the term 'exclusive rights' in the context of national appropriation, see *De Man*, Exclusive Use in an Inclusive Environment: The Meaning of the Non-Appropriation Principle for Space Resource Exploitation (2016), p. 305.

8 *Von Kries*, Die militärische Nutzung des Weltraums, in: *Böckstiegel* (ed.), Handbuch des Weltraumrechts (1991), p. 317; *Wolfrum*, Die Internationalisierung staatsfreier Räume (1984), p. 292.

9 The term 'use' encompasses both the economic and the non-economic uses of outer space, see *Hobe*, Article I, in: *Hobe/Schrogl/Schmidt-Tedd* (eds.), *supra* note 3, marginal note 36.

10 For example, the scope of the non-appropriation principle was (in the end, not successfully) challenged when a number of equatorial states claimed sovereignty over parts of the GEO through the 1976 Bogota Declaration; *Cheng*, Le Traité de 1967 sur l'espace, in: *Journal du Droit International* (1968), p. 533. See also *Gal*, Acquisition of Property in the Legal regime of Celestial Bodies, in: *Proceedings of the Thirty-Ninth Colloquium on the Law of Outer Space* (1996), p. 47.

11 See the formulation of the Judgement of the Permanent Court of International Justice in the *Lotus Case* (France, Turkey) (1927) P.C.I.J., Ser. A, No. 10, para. 45: "failing the existence of a permissive rule to the contrary".

12 For an account of the limitations to the freedoms of space, see *Hobe*, Article I, *supra* note 11, pp. 36-40; *Bueckling*, Die Freiheiten des Weltraumrechts und ihre Schranken, in: *Böckstiegel* (ed.), *supra* note 8, pp. 57 ff.

development and shall be the province of all mankind.¹³ We see very clearly that the answer to the question of the permission to appropriate is to be read in conjunction with Art. I of the Outer Space Treaty.

This systematic is reiterated in the Moon Agreement¹⁴, where we find a provision (Art. 11, para. 4) which states the right to exploration and use of the Moon on the basis of equality and in accordance with international law “and the terms of this agreement”. This constitutes an explicit permission¹⁵, whereas its Art. 11, paras. 5 and 7 list certain conditions for the reach of the exploitation of resources and the distribution of the benefits derived from the resources.¹⁶

The same is true for the regime for Antarctica¹⁷ which, although not a true international common as a number of States had already posed territorial claims to parts of Antarctica,¹⁸ also prohibits, at least temporarily, the taking of territory through the 50-years moratorium established by the 1998 Protocol on Environmental Protection to the Antarctic Treaty.¹⁹ A couple of years ago the international community discussed under the Convention on the Regulation of Antarctic Mineral Resources

13 On the wording of the term ‘province of all mankind’ in Art. I para. 1 OST, see *Hobe*, Article I, *supra* note 9, marginal note 52.

14 Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (adopted on 5 December 1979, entered into force 11 July 1984), 1363 UNTS 21 (hereinafter referred to as ‘Moon Agreement’).

15 However, as *Bin Cheng* points out, the permission “is concerned only with the modalities of exploration and use, such as landing, take off, emplacement of personnel, the establishment of manned and unmanned stations”; it does not confer “any additional right in relation to natural resources”, *Cheng*, *Studies in International Space Law*, Oxford (1997), p. 377.

16 See further *Jakhu/Freeland/Hobe/Tronchetti*, Article 11, in: *Hobe/Schrogl/Schmidt-Tedd (eds.)*, *Cologne Commentary on Space Law: Volume 2*, (2013), marginal notes 200-201.

17 Antarctic Treaty (adopted on 1 December 1959, entered into force 23 June 1961), 402 UNTS 71.

18 Seven countries raised claims to Antarctica in the premath of the coming into force of the 1959 Antarctic Treaty: Argentina, Australia, Chile, France, New Zealand, Norway, United Kingdom. Such territorial claims were, however, prohibited by Article IV para. 2 of the Treaty: “No acts or activities taking place while the present treaty is in force shall constitute a basis for asserting, supporting or denying a claim to territorial sovereignty in Antarctica or create any rights of sovereignty in Antarctica. No new claim, or enlargement of an existing claim, to territorial sovereignty in Antarctica shall be asserted while the present treaty is in force.”

19 Protocol on Environmental Protection to the Antarctic Treaty (signed on 4 October 1991, entered into force on 14 January 1998), 30 ILM 1455, see Art. 7: “Any activity related to mineral resources, other than scientific research, shall be prohibited”.

(CRAMRA)²⁰ possibilities of exploitation of Antarctic mineral resources which however, at the end of the day were denied for political reasons as the Convention was concluded, but never entered into force and was not ratified by a single state.²¹ Equally, we find this dichotomy between the appropriation of territory and an explicit regime for the exploitation of resources in the Law of the Sea Convention (UNCLOS).²² The appropriation of the Area, this is the seabed and ocean floor and subsoil thereof beyond the limits of national jurisdiction²³ is absolutely prohibited.²⁴ But as a consequence we have a regime, as contained in Part XI and its respective Section 2 of the Law of the Sea Convention, which fights for a differentiated system of the possibility to exploit these resources.²⁵

This comparison between the international legal regimes governing Antarctica, the deep seabed and outer space reveals that the use of territory in the global commons is characterized under international law by the rule of non-appropriation while the question on the distribution of resources is open for diverse legal regimes in many cases.

Thus, as a consequence we see very clearly that the legal structure of outer space legislation strictly prohibits the appropriation of territory on celestial bodies and in outer space. Whether this strict prohibition extends to natural resources in space as well ultimately remains unclear due to the lack of specific provisions dealing with space resources in the Outer Space Treaty. In any case, the Treaty does set certain conditions for the exploitation of resources as one possible type of the 'use' of outer space. The

20 Convention on the Regulation of Antarctic Mineral Resource Activities (concluded on 2 June 1988, opened for signature on 25 November 1988) (hereinafter referred to as 'CRAMRA').

21 For a detailed analysis of the legal significance of CRAMRA, see, for example, *Schram Stokke/Vidas, Governing the Antarctic: The Effectiveness and Legitimacy of the Antarctic Treaty System*, (1996), pp. 163 ff.

22 United Nations Convention on the Law of the Sea (adopted on 10 December 1982, entered into force on 16 November 1994), 1833 UNTS 3 (hereinafter referred to as 'UNCLOS').

23 As defined in Art. 1 para. 1 UNCLOS.

24 See especially Art. 137 of the UNCLOS stating that "No State shall claim or exercise sovereignty or sovereign rights over any part of the Area or its resources, nor shall any State or natural or juridical person appropriate any part thereof. No such claim or exercise of sovereignty or sovereign rights nor such appropriation shall be recognized."

25 Generally, the International Seabed Authority is equipped with powers to regulate deep seabed resources (Art. 150-168 UNCLOS).

question on a more precise international regulation of such use is basically left for the future when, for example on invitation by Art. 11 para. 5 of the Moon Agreement, the international community must come up within an agreement on the conditions for such exploitation.²⁶ The Space Benefits Declaration of the United Nations General Assembly of 1996²⁷ only answers the question on whether Art. I para. 1 OST provides for an explicit rule on the distribution of the benefits derived from the exploitation of resources.²⁸ Here the answer is: so far it does not, but this is an open question that also must be answered by the international community in the future.

C. Implications of Article II OST for the Jurisdiction to Regulate Space Resource Exploration, Exploitation and Utilization

We now turn to the second dimension of the relationship of Art. II OST and space resource exploitation. This pertains to the implications of the non-appropriation principle for State jurisdiction in outer space: if the regulation of space resources is left unresolved in international space law, can States adopt national space law in an effort to fill this lacuna?

Closely related to sovereignty, the concept of State jurisdiction can be divided in three types, namely prescriptive, adjudicative and enforcement jurisdiction.²⁹ We are concerned here solely with the jurisdiction of States to enact laws with respect to outer space. We will therefore focus on the concept of prescriptive jurisdiction, which refers to the power of a State “to make its law applicable to the activities, relations, or status of persons, or the interests of persons in things, whether by legislation, by executive act or order, by administrative rule or regulation, or by determination by a court”.³⁰

26 *Jakhu/Freeland/Hobe/Tronchetti, supra* note 16.

27 Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of Developing Countries, adopted by UNGA Resolution 51/122 of 13 December 1996 (‘Space Benefits Declaration’).

28 *Hobe/Tronchetti*, Space Benefits Declaration, in: *Hobe/Schrogl/Schmidt-Tedd (eds.)*, Cologne Commentary on Space Law: Volume 3 (2015), marginal note 68.

29 § 101 of the American Law Institute’s Restatement (Fourth) of the Foreign Relations Law of the United States, Jurisdiction, Council Draft No. 3 of 12 June 2016, and commentary (on file with *author*). This section of the Fourth Restatement reflects customary international law, see Comment b to § 101.

30 § 401(a) of the Fourth Restatement. § 101(a) of the Fourth Restatement defines it as “the authority of a state to make law applicable to persons, property, or conduct”.

Generally speaking, two approaches to the international law on jurisdiction may be valid.³¹ A first, restrictive approach holds that a State can only exercise prescriptive jurisdiction if a specific basis has been provided for by an applicable rule of international law. This approach is followed by the vast majority of authors as it is found to reflect contemporary State practice and customary international law.³² A second, permissive approach holds that States may generally regulate unless there is a prohibitive rule of international law to the contrary, as long as they can demonstrate an interest in an extraterritorial situation that is greater than that of other States.³³

According to the broadly accepted restrictive approach, if a State wishes to enact legislation pertaining to outer space, it must demonstrate a genuine connection with the situation on either one of six grounds found in a permissible rule of applicable international law, namely territory, effects, active personality, passive personality, protection, and universality.³⁴ Though there are not many rules on State jurisdiction in the framework of international space law, some provisions do offer guidance on a number of possible bases for prescriptive jurisdiction. These relate in particular to State jurisdiction through territory and active personality.

31 We may refer to the international law on State jurisdiction by virtue of Art. III OST that makes international law applicable to the activities of use and exploration of outer space by the States Parties to the OST.

32 See, for example, the conventions on the law of the sea developed since the Lotus case (cited *supra* note 11): Article 11 of the Convention on the High Seas (adopted on 29 April 1958, entered into force on 30 September 1962), 450 UNTS 11 and Article 97(1) UNCLOS. See also in legal literature on State jurisdiction *Bradley*, Universal Jurisdiction and US Law, 2001 U. Chi. Legal F. 2000, p. 323; *Lowe*, Blocking extraterritorial jurisdiction: the British Protection of Trading Interests Act, 1980, in: 75 Am. J. Int'l L. 1981, pp. 258–9; *id.*, Jurisdiction, in: *Evans (ed.)*, International law (2006), pp. 341–342; *Ryngaert*, Jurisdiction in international law, 2nd ed. (2015), p. 4 and 29. See further *Knox*, A presumption against extrajurisdictionality, in: 104 Am. J. Int'l L. 2010, footnote 30: “Whether or not that is really what the Lotus Court intended to state, it is not reflected in state practice. No state acts as if it has the right to set out rules for everyone in the world in the absence of an international rule specifically prohibiting it from doing so. Instead, states regulate on the basis of a limited, widely accepted set of jurisdictional grounds.” See further the long list of critics of the Lotus doctrine in *Crawford*, Brownlie's Principles of Public International Law (2012), Chapter 6, State jurisdiction.

33 This approach is inspired mainly by a broad and arguably incorrect reading of the *obiter dictum* in the Lotus case of the PCIJ, see *Ryngaert*, *supra* note 32, p. 29 and *Knox*, *supra* note 32, footnote 30.

34 § 401(a) of the Fourth Restatement.

We noted that the minimum consensus view concerning Art. II OST holds that this provision proscribes territorial sovereignty in outer space, including over celestial bodies, by banning claims of national appropriation, *inter alia* by means of sovereignty.³⁵ If States cannot establish territories in outer space, it follows that territoriality should be excluded as a basis for the exercise of State jurisdiction in space as well.³⁶ The Outer Space Treaty, “in essence, sets space aside as an extra-jurisdictional territory”³⁷. This does not mean that States cannot exercise jurisdiction in outer space at all. According to Art. VIII OST, States retain jurisdiction through active personality in outer space: “[a] State Party to the Treaty on whose registry an object launched into outer space is carried shall retain jurisdiction and control over such object, and over any personnel thereof, while in outer space or on a celestial body”³⁸.

Though both territoriality and active personality are recognised as bases for jurisdiction in customary international law, their implications for the scope of State legislative powers are vastly different. Territorial jurisdiction is defined as “a state’s jurisdiction to prescribe law with respect to persons, property, and conduct within its territory”³⁹. Personal jurisdiction, on the other hand, refers to the powers of a State “to prescribe

35 Indeed, it is submitted that the present section on prescriptive jurisdiction need only be considered under this minimum consensus view that holds that natural resources are not covered by the Outer Space Treaty. Otherwise we would be dealing with national interpretation of existing international law rather than the existence of prescriptive jurisdiction to adopt national legislation determining the legal status of space resources. For an analysis of the alternative approach concerning national space legislation as an interpretative tool, see *De Man*, State practice, domestic legislation and the interpretation of fundamental principles of international space law, forthcoming in 39 - 40 Space Pol’y 2017.

36 See *Cheng*, Studies in international space law (1997), p. 79.

37 *Blount*, Jurisdiction in outer space: challenges of private individuals in space, in: 33 Journal of Space Law 2007, p. 311. See also *Dann*, “The future role of municipal law in regulating space-related activities”, in: *Zwaan (ed.)*, Space law: Views of the Future (1988), p. 130: “The space treaties also affect municipal law in that they define in part the limits of national jurisdiction in relation to activities in space. The most important rule is that contained in Article 2 [sic] of the Outer Space Treaty: [...]. In general, therefore, State jurisdiction over activities in space will be on a personal, rather than territorial basis”. See further the manifold classifications in literature of outer space as an area beyond national jurisdiction, including in: *Lyall/Larsen*, Space law: A treatise, (2009), p. 277.

38 The reference to personnel of a space object registered by a State may be considered to be an application of the effective nationality requirement in international law to determine which State may exercise jurisdiction on the basis of active personality.

39 § 212 of the Fourth Restatement, Tentative Draft No. 2 of 22 March 2016.

law with respect to the conduct, interests, status, and relations of its nationals outside its territory”⁴⁰. Territorial jurisdiction may hence be the basis for the exercise of prescriptive powers by one State that determines the legality of the actions of others, for this follows from the law of the territory of the prescribing State. Personal jurisdiction, however, merely entails that a State can determine the law as it applies to its own nationals, in particular in areas not covered by territorial sovereignty by any State; it does not mean, of course, that a State can regulate, through the application of its internal law, the actions of others relating to the environment in which its own nationals carry out their activities, or the status of this environment as such.⁴¹

From the above it follows that, for international space law, the proscription of the exercise of State jurisdiction as an element of territorial sovereignty in Art. II OST means that “States may not exercise exclusive jurisdiction over outer space as such”⁴². The jurisdiction pursuant to Art. VIII OST with respect to certain persons and objects in outer space does neither imply nor entail jurisdiction over outer space as such, as the regulation of the status of outer space remains firmly within the prescriptive domain of the international community.⁴³ This is corroborated by Art. VI OST, which notes that “States Parties to the Treaty shall bear international responsibility for national activities in outer space, including the Moon and other celestial bodies, whether such activities are carried on by governmental agencies or by non-governmental entities, and for assuring that national activities are carried out in conformity with the provisions set forth in the present Treaty”. ‘National space activities’ in this context are

40 *Ibid.*, § 214.

41 See also *Csabafi*, *The concept of State jurisdiction in international space law* (1971), p. 62: “Jurisdiction with respect to the [ships and vessels on] the high seas *is not jurisdiction over the high seas as such*. This we think is a primary analogy that is applicable as a concept to State jurisdiction in outer space” (emphasis in original). See also *Blount*, *supra* note 37, p. 327: “The jurisdiction applies to the territory of the craft and not to the territory outside the craft, thus the result is that a person who leaves the craft also leaves the jurisdiction of the United States.”

42 *Csabafi*, *supra* note 41, p. 47.

43 *Ibid.* p. 62. See also *Blount*, *supra* note 37, p. 315: “States may not, due to the constraints of the Outer Space Treaty, extend their jurisdiction over outer space. This includes legislative jurisdiction, which ‘refers to the supremacy of the constitutionally recognized organs of the state to make binding laws within its territory’”.

typically thought to encompass all activities carried out by nationals of a State or on its territory, i.e. all activities within the jurisdiction of a State.⁴⁴

Though its objective is related to identifying the responsible State, Art. VI OST supports the reading that the prescriptive jurisdiction concerning the status of outer space, i.e. the determination of the legality of all actions by all actors therein, lies first of all with the international community. States retain personal jurisdiction over personnel and objects launched into outer space mainly in order to ensure that activities carried out by them are in keeping with the rules that govern this environment, as adopted by the international community, *inter alia* because they will be internationally responsible for their activities.⁴⁵ This is confirmed by the explicit link between jurisdiction and control in Art. VIII OST, which, it should be reiterated, contains the only reference to jurisdiction in the Outer Space Treaty.⁴⁶ This also dovetails with the traditional justification for active personality as a basis for State jurisdiction in inter-

44 Gerhard, Article VI, in: Hobe/Schrogl/Schmidt-Tedd (eds.), *supra* note 3, marginal notes 41 and 46-47.

45 To be sure, Arts. VI and VIII establish different links between the State exercising jurisdiction and the actors for which it is responsible through nationality or territory *c.q.* over whom it retains jurisdiction through registration. Nevertheless, both provisions point towards control and respect for international law as the rationale for the exercise of elements of State jurisdiction in the international area of outer space. Moreover, the ISS Intergovernmental Agreement interprets the reference to personnel of a registered space object in Art. VIII OST as meaning 'nationals', see Art. 5, para. 2 of the Agreement Among the Government of Canada, Governments of the Member States of the European Space Agency, the Government of Japan, the Government of the Russian Federation, and the Government of the United States of America Concerning Cooperation on the Civil International Space Station of 29 January 1998: "Pursuant to Article VIII of the Outer Space Treaty and Article II of the Registration Convention, each Partner shall retain jurisdiction and control over the elements it registers in accordance with paragraph 1 above and over personnel in or on the Space Station who are its nationals". See, finally, the comment *supra* note 44. For more on the relation between Arts. VI and VIII, see Gerhard, *supra* note 44, nos. 50-51.

46 This link is important in understanding the scope and extent of the jurisdiction notion in international space law, in that "[j]urisdiction and control" must be read as one block: 'Jurisdiction should induce control, and control should be based on jurisdiction'. At the same time, jurisdiction and control is the baseline for ensuring the fulfilment of the State Parties' international responsibilities under Article VI of the Outer Space Treaty": Schmidt-Tedd/Mick, Article VIII, in: Hobe/Schrogl/Schmidt-Tedd (eds.), *supra* note 3, marginal notes 48-49, referring to Lafferranderie, Jurisdiction and control of space objects and the case of an international intergovernmental organisation (ESA), in: 54 Zeitschrift für Luft- und Weltraumrecht 2005, p. 231.

national law, which is typically premised on “the need to protect a State’s reputation from being blemished by the conduct of its nationals abroad”.⁴⁷

As none of the other four bases of State jurisdiction are reflected in the international space law treaties, it would follow from the restrictive approach to State jurisdiction that States do not have the power to prescribe rules determining the legal status of natural resources in outer space on the grounds that they would not be covered by the existing space treaties. The question then arises whether an alternative approach that allows States to prescribe legislation concerning extra-territorial resources based on a general interest in their exploitation would be permissible or would result in a different outcome. We are inclined to answer these questions in the negative: even if it would be sufficient under the general international law on jurisdiction for States to demonstrate an interest in exercising jurisdiction over an extraterritorial situation, which is a tenuous starting point in any case⁴⁸, the fundamental principles of the Outer Space Treaty warrant against the application of this permissive approach to the international legal framework of outer space. Moreover, a number of general principles of international law complicate the application such a permissive approach, taking into account the objectives of the international space law regime.

First, it is likely against the aims of the Outer Space Treaty for a State to exercise prescriptive jurisdiction in outer space simply because the international framework appears to be silent on this point. The principal purpose of the OST is to regulate outer space as an international area, to be governed, first and foremost, by international law.⁴⁹ This follows not only from Art. III OST but also from the designation of activities of space exploration and use as the province of all mankind in Art. I OST, but also, and particularly, from the preamble of the OST, which carries significant interpretative weight as per the customary rules of treaty interpretation. The OST preamble stipulates that States have entered into the agreement “[d]esiring to contribute to broad international cooperation in the scientific as well as *the legal aspects of the*

47 Ryngaert, *supra* note 32, p. 106 and references.

48 See *supra* note 32 and accompanying text.

49 See Kish, *The law of international spaces* (1973); Csabafi, *supra* note 41, 1971 p. 40. See further McCord, *Responding to the Space Station Agreement: the Extension of U.S. Law into Space*, in: 77 Geo. L. J. 1989, p. 1936, also cited in Blount, *supra* note 37, p. 311: “[T]he Outer Space Treaty does not comment on jurisdiction outside space objects or personnel, except to ‘designate international law as applicable to space activities’”.

exploration and use of outer space for peaceful purposes”, and “[b]elieving that such cooperation will contribute to the development of mutual understanding and to the strengthening of friendly relations between States and peoples”.⁵⁰ The international instruments on friendly relations between States have subsequently been singled out alongside the UN Charter as particularly crucial parts of international law that should guide the activities of States in the exploration and use of outer space.⁵¹

These rules appear to confirm that, even if certain activities have not been explicitly removed from the jurisdiction of individual States, States must aim for international cooperation in elaborating the law on outer space. This reading is corroborated even by the existing initiatives to draft national legislation on space resource exploitation. The US Commercial Space Launch Competitiveness Act requires all US citizens to exercise their rights over recovered asteroid and other space resources in accordance with applicable law, including the international obligations of the United States.⁵² This reference to international law is in compliance with the provision of Art. VI OST, confirming the above reading of this provision as requiring States to exercise their active personality jurisdiction primarily as a measure of ensuring respect for international space law. The Luxembourg Law on the Exploration and Use of Space Resources, which entered into force on 1 August 2017, mirrors its American counterpart in providing that authorised operators may only explore or use space resources “in accordance with the conditions of the authorisation and the international obligations of Luxembourg”.⁵³

50 Paras. 4-5 of the OST preamble (emphasis added).

51 See Art. 2 of the Moon Agreement; Para. 4 of Part B of UNGA Resolution 37/92 of 10 December 1982 containing the Principles Governing the Use by States of Artificial Earth Satellites for International Direct Television Broadcasting.

52 H.R.2262 — 114th Congress (2015-2016), § 51303.

53 Art. 2 (3) of the Law. The English translation of the official French text of the law can be found at <http://www.spaceresources.public.lu/content/dam/spaceresources/news/Translation%20Of%20The%20Draft%20Law.pdf>. The current text of the law came about in response to a negative advice of the Luxembourg Council of State on an earlier draft proposal, which simply stated that “[s]pace resources are capable of being appropriated under international law”. See Art. 1 of the Luxembourg Draft law on the exploration and use of space resources from 11.11.2016: “Space resources are capable of being appropriated in accordance with international law”, available at http://www.gouvernement.lu/6481974/Draft-law-space_press.pdf. The Council of State recommended that this provision be suppressed, since it considered that the applicability of the existing international space law framework to natural resources would first need to be clarified before rules concerning their exploitation and appropriation could be adopted at the national level. See Advice of the Council of

Second, if it would suffice, pursuant to the permissive approach to jurisdiction, for a State to express an interest in a given situation in order to be able to exercise its prescriptive jurisdiction, it appears to be impossible for that State to satisfy the interest-balancing test that goes with this broad approach. In cases where multiple States may wish to assert their jurisdiction to apply domestic legislation to a foreign situation, a number of general principles of international law will soften the actual exercise of these legislative rights in order to minimize conflict. We must recall, in this regard, that the maintenance of international peace and security is the ultimate objective guiding the application of such general principles of international law to activities in outer space, according to Art. III OST.

It is a general principle of international law that States should refrain from using any type of measure “to coerce another State in order to obtain from it the subordination of the exercise of its sovereign rights and to secure from it advantages of any kind”.⁵⁴ This principle is closely connected to the abuse of rights doctrine, which entails, *inter alia*, that a State cannot “abuse the right to legislate, especially in such a way that would ‘infringe the sovereignty and independence’ of another State”⁵⁵. This, in turn, is an application of the underlying requirement that all treaty obligations must be performed in good faith.⁵⁶ The Permanent Court of Arbitration has clarified this fundamental principle as meaning that “treaty obligations are to be executed in perfect good faith, therefore excluding the right to legislate at will concerning the subject-matter of the treaty, and limiting the exercise of sovereignty of the State bound by a treaty with respect to that subject-matter to such acts as are consistent with the treaty”⁵⁷. It has

State of 7 April 2017 concerning the *Projet de loi sur l'exploitation et l'utilisation des ressources de l'espace*, No. CE 51.987, No. dossier parl. 7093, available at http://www.conseil-etat.public.lu/content/dam/conseil_etat/fr/avis/2017/07042017/51987.pdf (French text only).

54 Declaration on Principles of International Law concerning Friendly Relations and Cooperation among States in accordance with the Charter of the United Nations, A/RES/25/2625 of 24 October 1979. We already noted that this Declaration is given particular importance in the UN space law treaties and resolutions, see *supra* note 51.

55 *Blount*, *supra* note 37, p. 315, with references to *Shaw*, *International Law*, 4th ed. (1997), p. 456.

56 Art. 26 of the Vienna Convention on the Law of Treaties (concluded on 23 May 1969, entered into force on 27 January 1980), 1155 UNTS 331.

57 North Atlantic Coast Fisheries Case (Great Britain, United States), 7 September 1910, Rep. Int'l Arb. Awards Vol. XI, p. 169. Compare International Court of Justice, Case concerning the Barcelona Traction (Belgium, Spain), 5 February 1970, Judgment, separate opinion Judge Sir Gerald Fitzmaurice, para. 70, stating that „[i]t is true that, under present conditions, international law does not impose hard and fast rules on States delimiting spheres of national jurisdiction [...]. It does however

therefore been rightly noted that the exercise of the legislative jurisdiction of States relative to the activities of their nationals in outer space “must be bona fide”⁵⁸.

Applied to State jurisdiction, the above principles mean that jurisdictional assertions will only conform to international law “if the asserting State’s interests in having its law applied to a foreign situation outweigh the interests of another involved State.”⁵⁹ This interest-balancing test for the exercise of prescriptive jurisdiction is codified in the current Restatement of the Foreign Relations Law of the United States.⁶⁰ In relevant part, this Restatement provides that, “[e]ven when one of the bases for jurisdiction [...] is present, a state may not exercise jurisdiction to prescribe law with respect to a person or activity having connections with another state when the exercise of such jurisdiction is unreasonable”⁶¹. The upcoming revision of the Restatement replaces this interest-balancing test with a general reference to prescriptive comity, and notes that, “[i]n exercising jurisdiction to prescribe, the United States takes account of the legitimate interests of other nations as a matter of prescriptive comity”⁶². This

(a) postulate the existence of limits [...] and (b) involve for every State an obligation to exercise moderation and restraint as to the extent of its jurisdiction [and] to avoid undue encroachment on a jurisdiction more properly appertaining to, or more appropriately exercisable by, another State”.

58 *Csabafi*, *supra* note 41, p. 122.

59 *Ryngaert*, *supra* note 32, p. 155. See also *Inazumi*, *Universal Jurisdiction in Modern International Law: Expansion of National Jurisdiction for Prosecuting Serious Crimes under International Law* (2005), p. 134 (“It should also be remembered that merely because a jurisdiction is legal does not necessarily mean that a State has the absolute right to exercise it”); *Bianchi*, ‘Reply to Professor Maier’, in: *Meessen (ed.)*, *Extraterritorial jurisdiction in theory and practice* (1996), p. 78 (“Phenomena of extraterritorial jurisdiction [...] vary a great deal in intensity, depending on the potential of collision with other states’ commands and on how intrusive into other legal orders the attempt to exercise authority turns out to be”).

60 American Law Institute, *Restatement (Third) of the Foreign Relations Law of the United States*.

61 § 403 (1) Third Restatement. Whether the exercise of jurisdiction is unreasonable will have to be determined on a case-by-case basis, taking into account a number of factors, including “(e) the importance of the regulation to the international political, legal, or economic system; the extent to which the regulation is consistent with the traditions of the international system; (g) the extent to which another state may have an interest in regulating the activity; and (h) the likelihood of conflict with regulation by another state”: § 403 (2) Third Restatement.

62 § 201 (2) Fourth Restatement. Prescriptive comity can be construed as a concretisation of the various general principles of international law mentioned earlier and will likely be applied in specific cases by taking into account the factors currently codified in § 403 (2) of the Third Restatement, mentioned *supra* note 63.

test finds support in the contemporary jurisprudence of the United States Supreme Court.⁶³

The Outer Space Treaty explicitly confirms the equality of all States under international law, regardless of their degree of economic or scientific development. Absent an exclusive base of jurisdiction such as can only be provided by territorial sovereignty, all States must be presumed to have an equal interest in regulating the regime of natural resources in outer space for exploitation by their citizens or through space objects launched on their registry.⁶⁴ In this context, it would appear impossible for a State to show that it has a stronger interest than other States in regulating an activity left unresolved by current international space law in an environment that is fundamentally characterised by nothing if not the equal interest of all States. For, as codified in the very first provision of the first article of the Outer Space Treaty, “[t]he exploration and use of outer space, including the Moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind”.

It is perhaps this realisation that inspired the US legislator to conclude the 2015 Commercial Space Launch Competitiveness Act with a provision explicitly declaring that “[i]t is the sense of Congress that by the enactment of this Act, the United States does not thereby assert sovereignty or sovereign or exclusive rights or jurisdiction over, or the ownership of, any celestial body”.⁶⁵ The inclusion of such a ‘sense-of-Congress’ provision points to a restraint in the exercise of prescriptive jurisdiction by the United

63 See *F Hoffmann-La Roche Ltd et al v Empagran SA et al*, 124 S Ct 2359 (2004): “This rule of statutory construction cautions courts to assume that legislators take account of the legitimate sovereign interests of other nations when they write American laws. It thereby helps the potentially conflicting laws of different nations work together in harmony – a harmony particularly needed in today’s highly interdependent commercial world.”

64 The four other grounds of State jurisdiction mentioned earlier (passive personality, effects, protection and universality) cannot be invoked by one State as the basis to exercise prescriptive jurisdiction over space resources in abstracto to the exclusion of all other States, since the equality of all States in an international area such as outer space by definition precludes differentiating between States in the application thereof. There is no reason why the exploitation of space resources would produce effects only or predominantly in the territory of one state, or why such activities would pose a greater risk to the security of one State than any other’s.

65 Commercial Space Launch Competitiveness Act, ‘Sec. 403 Disclaimer of extraterritorial sovereignty’.

States on a contested issue such as the exploitation of space resources, and can rightly be considered a recognition of the need to adhere to the principle of prescriptive comity.

D. Conclusion

With Art. II of the Outer Space Treaty, as well as with the provisions on the distribution of the benefits derived from resources, the international community has taken a very important decision: outer space and celestial bodies, including their resources, are global commons under the (sole) jurisdiction of the international community of States and do not fall under any national jurisdiction. Therefore, the binding formulation and enactment of explicit rules for the exploitation of resources in outer space and on celestial bodies is left to the international community. No single state has at all jurisdiction on this question as outer space, celestial bodies and thereby also space resources are not subject to national jurisdiction. Therefore, current initiatives of the United States and Luxembourg as well as some planned efforts by other states fundamentally lack any jurisdiction to unilaterally legislate over this common and the use, selling and ownership of its resources and enact such legislation. These pieces of legislation may be enacted but they do not have a legally binding character. They are, so to speak, a shot in the dark.

If Art. II OST does not settle the lawfulness of or the limits to the exploitation of natural resources in outer space, the other implication of the provision still stands firm, for the prescriptive jurisdiction to determine these issues lies with the international community, and cannot be exercised by individual States in the absence of such international framework. Rather, the role of municipal legislation in this context should be limited to ensuring that State nationals adhere to this international framework.