Lunar Light- Planetary Renewal- a Holistic Viewpoint

Space science today finds a growing maturity and potential at many levels. We will certainly see that over the past 50 years such abilities have moved from an early and rarified expertise within isolated national identities, into a readily available topic within an informed global community.

The space development paradigm of our times can no doubt be viewed as a highly inclusive one, innovative space enabled communications and informational resources are widespread. Space based environmental surveys and many well-related analytical and computational processes play a significant part for a growing understanding of problem solving contingencies. Space security issues and the preservation of near earth orbital capacities provide an over reaching theme for a durable space environment and space development for lunar and solar system exploration offers a genuine potential for collaborative international venture at many levels.

Yet at this time the themes of a guided US space policy remain as a fairly undetermined factor within outlooks for what can be generally proposed and brought forward as providing an integrated and holistic space development model. What are the considerations and what are the arguments for insight into an equitable and productive way forward.

At this time lunar development offers a unique and unprecedented opportunity, but an examination of this opportunity might not simply determine for what practical eventualities would secure the prizes that might be proffered, it might also seek to determine what such munificent endowments would authentically comprise before starting out.

We might agree that the style and methodology of a future US space development will have an important and formative effect, and we might also perhaps feel that the capable space science communities, within the given attributes and for the many purposes, both for communications, for information, and for exploration, represent significant potentials and offer considerable expertise into the manifold developmental perspectives.

Yet such intrinsic abilities remain subjected to the careful limitations of the available resources, for both the practical and the theoretical engagements. The task for a productive US space policy platform is to negotiate and realize the skillful optimization and veracity of the space development stylistics, in order to demonstrate the beneficial course of action that enables the needed objectives without detracting from the inclusive advantages.

For a world in transition we see a complex picture emerge. At the dawning of the 21st century a global space based communications network becomes an essential feature of everyday life. Global warming features are apparent and initiative for reform into sustainability criteria and thoughtful industrial process is predominant.

Global populations seek participation and assurances for many serious concerns, resource depletion and species extinction are tangible aspects of mutual and interrelated situations. But although an essential commitment towards problem solving is well observed, appropriate actions must find focus and become generally acceptable in order to be effective. Although the agencies and structures that contribute into the current global development platforms are multiple, clear insight, focus and availability for further collaboration is sought out in order to ensure the best possible advisement and rapid planning and momentum against what is surely a sensitive and vulnerable global condition.

How can space science and a future lunar settlement inspire and inform the needs of this historic and unprecedented moment?

A discussion for problem solving around an ongoing space and lunar development might include for several factors: What are the economic issues, what are the social ones and what are the political and the trans-political ones.

Economies, Financial and Otherwise:

We might propose that the rationale for comprehensive space development is not only for scientific understanding it is also for the advancement of human societies and cultures. And we might look back and see what fabulous insights space venture has achieved for the collective and the global dimension. "One small step for man one leap for mankind" was true then and it is true now. The International Space Station is an enduring inspiration and monument for international engagement. The images from ISS, and views of the space shuttle and the international teams of astronauts at work on many unique space projects have given the entire world an unforgettable glimpse of the serene beauty of space assets and the courage and determination of the exponents of the space age abilities.

Recently the preliminary investigations of the Augustine Commission have determined that the US lunar development program is generally constrained by the budgetary requirements. Prospects are uncertain, although abilities might be dramatic, the choices must be made. Time scales are limiting, the ISS might be assured of continuity for a while, the space shuttle may be retired, and the lunar landing may or may not be presently achieved.

What we will determine as the better path for the US space program must surely be worthwhile in many ways, not only for the resolution of the intrinsic economic considerations, but even as a guiding moral and ethical choice. The purpose of space venture can certainly be seen as providing for the advancement of this our home planet. We will not reach towards the stars in order to escape from our condition, or to abandon our humanity, but we will approach the new horizons in order to improve our circumstance, and this engagement provides both the opportunity and the responsibility of the forthcoming space age.

For America today the pathway of international collaboration into space and lunar development is an exciting and highly responsive one. It represents both a cost effective and a highly capable platform. It embraces a fast paced and motivated initiative, for a pooling of talent, expertise, contributions and resources and popular commercial, national and global levels of support.

Such an innovative platform will perhaps make possible what otherwise might become improbable. It will allow international venture both as governmental and corporate opportunity to secure and expand an enduring ISS facility. It gives a suitable opportunity for investment to maintain or replace the aging shuttle fleet. It will permit and engage the dimensions for many collective and radical space science ventures, even to build the many innovative levels of a proficient space faring capacity, such as an orbiting space fuel depot and a near space shipyard.

The collaborative outlook allows the governments, scientists and the peoples of this world a quiet moment to come together, to quickly achieve the landing and settlement of the moon as a permanent international base, to learn together how to use the many features and facilities of both well established space faring resources and the forward looking and emerging space programs to design, build, fuel and initiate the long journeys to mars and beyond.

And such a remarkable space development platform can also clearly demonstrate both US leadership and good intention, providing motivation, purpose and ability for equitable civil society development and balanced and productive international relations.

We do not know yet, what tremendous advantages lunar settlement might bring. It is possible that the helium enriched moon dust will construe the energy source of a future world. Advanced lunar-based communications might manifest as the expedient carriers of additional levels for a future global connectivity. Lunar based observatories might quickly unlock the secrets of the physical world and the universe around us. Lunar laboratories may readily create generations of medicines and the innovative materials that will be of untold benefit. Lunar based spaceports, and lunar developed primary resources and fuels, could readily support greater space faring capacities for the journeys that are lie ahead. But above such important considerations, we might appreciate that if lunar settlement is to mark the onset of a durable space age that is of genuine benefit to all peoples, the guiding and underlying principles and precepts must be investigated and the most appropriate choices be made.

The doorway to international space collaboration is typically an open one for US interests, yet hesitation is apparent. At this time the presage into the global space venues provides a logical and an available direction, yet the issues for the styles of co-operative venture also become the issues that affect for many levels of engagement into the attributes and determining concerns of an interrelated international community.

At this critical juncture we might well examine what the space age abilities can and must ensure for both a national US advancement and for the many connected and interrelated global agendas into an evolving planetary condition. And these topics are not isolated or exclusive ones.

We might step out upon the unilateral and solitary path, but we might easily discover a vast and collaborative highway. The years ahead might well bring about the inspiring events of an international lunar settlement, but such a renowned and historic achievement might also depend to a large extent upon the purpose and intention that are found within the mutual engagements, interchanges and objectives of an focused national and international development prospectus.

Our history is not a kind one, and science remains as a powerful yet impartial agency, still despite such a definition, we do not find that that we remain without genuine recourse for the guiding and humanistic rationales. Science has given our world inestimable benefits and science has also proposed tremendous dangers, and the paradox continues to unfold.

So how can we address and answer the arguments within the complexities. It is perhaps true that international lunar settlement provides an inspiring theme, but that is only the beginning and not the end of such a story. It is perhaps reasonable to expect that such collaboration might rapidly speed up and enable the harder tasks of a space exploration agenda and bring the investment and resources that are required to the requisite and sufficient levels. And the ensuing benefits might be many, even to bring the peoples of this world together in the spirit of creative engagement and for a growing mutual and global interchange.

As we approach the space ages of a future world, we might take stock of what are the genuine capacities for renewal, for productivity and for stability. For what space sciences might propose as a leading vehicle for human advancement and for how and why international space venture and lunar settlement might become the touchstone and the guiding force for a global era. Such a dimension does not benefit from segregation and isolation into specifics, many compatible levels of applications are offered through diffuse and capable space based utilities and through a general appreciation of space development and exploration potentials. The holistic model for space development gives insight for how an integrated approach will assist us all and like so much in life, the inclusive model is also a very simple and valid key that unlocks an efficient and expedient purpose.

Partnership is productive, US technologies for space based communications and informational resources are capable of providing for the further establishment of essential and innovative global development networks. The holistic and internationalized linkage of a wide scale and collaborative US lunar development venture into a collaborative planetary (earth based!) developmental purpose gives a trans-political and technologically enabled identity for effective momentum into various situations and areas of concern.

Such a platform can address for many areas within issues such as equitable security dynamics, for insightful industrial and economic provisions, as well as for the establishment of protected civil society requisites. The informational and scientific interchange that can be obtained and determined in this way will serve the peoples of this earth now and into the distant future. And this working basis, this formal linkage of the space based sciences into purpose for both this planet and for the ones beyond will assist as we negotiate the immediate onsets of the space and information age and it will provide a functional and expedient resource for the growing needs of a mature and pacifist global society.

The provision of an internationalized approach within US space development identities, does not constrain for a growing technological productivity. It is a factor that will enable for the far greater commercial and economic potentials, the accessibility of such an integrated condition can not only bring together many

rapid developmental alignments but also ensure that the purpose of such collaborative venture allows for the most responsive, equitable and beneficial effects.

It might seem as if this inclusive supposition is perhaps an overreaching preliminary, but it is also a pre-emptive one. It sets the guidelines and demonstrates the structures for inclusive and equitable formulations into careful and balanced outcomes. It enables a fast realization of many mutual benefits against a certain background of global dissonance. And we might be assured that the durable space communities might indeed formally act to manifest the dimensions of a productive planetary development, not only because they are able to reach to another world but also because they are able to reach for the mutual assurances and the humane and guided perspectives that must be undertaken within this one.

The international platform for lunar development can not only give our planet a unique dimension for the scientific capacity it can also give the international community a unique technologically enabled perspective, finding the integrated purpose that will enable our diverse social, political and economic mores into capable, useful, well justified, informed and collaborative outcomes.

One day soon we might look up at the moon and wonder how the determining and very visible parameters for the outcomes of a future world had been set in place. We might find that our decision to settle the moon within the diverse assets of the manifold international programs, had brought a skillful and collaborative scientific basis into dramatic reality as an opportune and highly valued internationalized resource.

We might wonder how we had managed in the days before the innovative focus into the essential space sciences had brought us together as peoples from all places and within all walks of life. We might see how so much of we can and will undertake as individuals, as nations and even together as a global community is proposed, enabled and obtained through the many practical levels of the space science applications, and we might appreciate that such a greater ability had given us both confidence and genuine opportunity for an ever evolving, prosperous and benign planetary future.

A Future Lunar Society, values and identities:

The peoples of this world are not alike, human cultures are unique, societies are constructed in many different ways, allegiances and the unique introspective values will always become the careful organism that carries the singular benefit.

The leap from a human history that has been identified as a national one towards a human history that can be identified as a global one passes over the a priori junctures of our eternal personal and cultural identities. Seen from space our human tenure is so immediate, infinitesimal and fragile, yet we have shaped our world accordingly, and this is both our strength and our ability. Space sciences and space-based communications speak to us through the universal language of a profound yet innocent technology, they indicate our ascendance over our emergent condition and for this reason such proficiencies become the generally accepted medium of exchange. Global civil society populations rely upon space science for everyday functionality, for communications, for so many of the practical and typical structures within a local environment. Space science already comprehensively informs for so many areas of our lives and it can certainly inform for so much more.

International lunar development is the formative and primary vehicle which offers a clear and present focus into the comprehensive pathways and the global methodologies of a technologically enabled planetary development. Not for any exacting determination or definition of the values of a diverse human culture within various political or cultural designations, but for the general advancement of the multitude human situations and environmental conditions within an open-ended and ongoing dissemination of expertise. This ability offers a co-operative engagement into the burgeoning informational and communications dimensions which can directly address the problem solving contingencies. And such an educated functionality for a modern space science capacity is informed by logic and enabled though mutual insight.

Valuable applications and resources for the guided intentions of global space engagements are generally apparent, for non-proliferation, for crisis, for economic productivity and for civil society interchanges and

assurances. And such applications also provide ethical and moral choices, for how we relate, how we work together at a moment of unprecedented and critical transition and how we will shape the outcomes of an immediate and a planetary destiny.

The journey to the stars is also the journey to discover our world. The declaration of human rights gives us the expansive background that will include for all represented peoples within the future contingencies of a holistic space development outlook. Do we wish to embark together for the further shores and do we wish to see such an unfolding potential give effect for not only a highly productive space settlement eventuality but also for the designation of the practical and useful international assurances, oversights and measures that construe the technological insights within a greater planetary enablement.

The actual price that might be paid for a quick lunar settlement might not be so much located within the cost of the apparent tangibles, it might well be found within our ability to locate, invite and confer for the integrated space development forums of a future world .To appreciate that value and purpose for co-operative space development is also situated within value and purpose for the many growing civil society attributes. To find the pathways and avenues for the space, communications and informational manifests which reach for many inclusive and essential locations, in the many ways that are of so much import and significance.

The mutual venture to the moon and beyond gives us all a chance to see how this collective effort might finally be proposed, and how it might become suitably focused, to watch as it accurately unfolds and to finally realize our common goal and the fruits of a well-earned connectivity within this world of complex particulars.

Such a condition is not divided against itself, space and cyber space does not recognize the incidentals of national identity as being the excluding factor but as being the containing and supporting factor. Mathematics and science does not recognize culture or politics as being the instigator of such insight but as being the translator.

The role of US interests for such a probable dynamic is a paramount one, but it is based on the ideals of a universal human value. The assurances of health, education and all the necessities of daily life are the topics that we see as the leading ones, both for a national community and for our role within an international one. We have much to give and much that can be given, we seek to build trust, insight and common purpose for self- betterment, and in this we are not alone. We are perhaps a youthful society but we are a committed, sincere and generous one, and now we have come to the time and place where such leadership can achieve a most remarkable space age eventuality.

Working together with our international partners and with many space agencies and governments around the world, we can continue to quickly enlarge and greatly expand the important legacies of the moon landing and the space shuttle and the ISS programs. And this collaborative effort can also be seen within the greater and most productive terms, providing for both this world and for the worlds beyond. Nurturing the formative abilities of a internationalized space science platform that quickly brings us the benefits of a comprehensive lunar development and elaborating the criteria of a space science dynamic that informs and enables a rapid developmental prospect within both our national and the many global populations.

So how and where can the integrated and holistic model be obtained and brought forward, and how can that be expedited as an acceptable international venue. The agencies and conditions for such a platform already exist, an effective policy is steered by what can be done, it is not determined by what is left undone.

Treaty Venues and Political Partnerships:

For many years the space treaty forums at the United Nations have provided an invaluable resource for countries wishing to participate for the space development perspectives. The Committee on the Peaceful Uses of Outer Space provides a comprehensive and ongoing invitation to all nations. This platform is valued and generally subscribed to, by both the space faring nations and those who seek space faring capacities. The expansive activities and comprehensive reports of the Committee propose substance and

content for the investigation of both the space communications and informational resources and the exploration dimensions, working for the planetary, lunar and further outlooks, viewing space exploration as an invaluable resource for further scientific understanding and as a productive medium of interchange and achievement for national, social and cultural advancements.

Yet US participation into these effective forums has been a delayed and problematic eventuality, although the ascendance of the US motivated space technologies, has often provided a leading provision for much of what has been substantially achieved. Not only in terms of giving the world a first lunar landing and many benefits within the shuttle enabled ISS platforms, but also as contribution for a highly capable global communications condition and the growing attributes of the many original informational resources which have been identified by an innovative silicon-valley community. And much more has taken shape over the formative years for the opportune and generous US space development endowments. Space based technologies have come to play a leading and effective role within security and crisis alliances and containments, and cyberspace has become the newer frontier for compliance into the international norms that ensure ensuing benefit and access.

The accessible nature of such US innovation is well appreciated, yet the paradoxes within the outstanding US space policy condition, have made US leadership for collaborative space development a topic which often stands outside the main stream discourse. A perspective that has been constrained and challenged by the national and policy led purpose for high ground oversights and the determination of suitable interchange dynamics.

Space development around the world provides a fluid and an on going economic contingency, seeking out and finding extensive and practical methodologies, applications and outreach situations, a fast moving eventuality that now posits the assumptions which will presently determine for how and why US participation and leadership for the space development attributes can show purpose for the way forward.

It is becoming apparent that the more distant unilateral US perspectives proffered to date within space development attributes can and will affect to a great extent for the US enterprise condition, indeed it might be time to consider if the initial policy isolation will presently give way to the more integrated dynamics that are offered by the holistic model. And the rationales for such partnership and engagement are not only for a well supported and viable lunar settlement program they are also for the determination of durable and productive international relations.

Why and how do the space and information age attributes create and expose such a close and effective global and civil society interchange condition? Our political, culture and social identities are peculiar and unique ones, an inevitable devolution of diverse national, and economic structures into a holistic space age eventuality is not a subject that could be taken lightly, yet is not a subject that we should stand against, but a subject that we should quickly anticipate.

Radical outcomes might well look for responsibility in order to become to become well guided and contained ones, for an international community that seeks rapid growth and development, unproductive fragmentations and a divisiveness of interests are set against insight into the values of collaborative engagement.

Communications, informational and computational technologies and space development certainly now provides us with the trans-political medium, but human culture is a sensitive identity that does not require assimilation into impersonal or totalitarian outcomes. Even so the opening up of initiative for US led problem solving dimensions within the outer space forums at the UN treaty venues although reaching to a global scale does not have to manifest as an invasive or an authoritarian party, rather it can give better provisions for the terms of a renewed focus into the comprehensive and durable civil society attributes, that have been so well intended, supported and manifested through the long standing commitments within the Declaration of Human Rights.

Thomas Jefferson gave guiding light and inspiration to our nation and to the world, but such an equitable determination for the enduring and universal values, also proposed that institutions must advance to keep

pace with the times, and that a grown man might not wear the jacket that had fitted him as a child. And it would seem as if the struggle against slavery and disenfranchisement, and for the freedoms of an educated and balanced civil society condition surely continues, that it has now reached to the threshold of an unimaginable newer era and that it is perhaps time to take up the greater garments that might suit for the purposes of an equitable and technologically enabled human society.

Science and technology are impartial agencies and although such impartiality gives a growing accessibility that does not come completed and without any dangers. The tragedies we face are well understood ones, while many current environmental and economic factors might create unstable conditions, a more immediate process for many administrative and commercial factors, also suggests that civil society populations may also become excluded entities that are marginalized against dominant interests. Fast pathways that lead to awareness and understanding may become progressive, educational, open and available or they may become closed and insular within national and cultural perspectives. Space enabled informational and computational dynamics can surely create better focus and functionality for civil society and economic requisites, but opportunities require focus and consolidation or they may be generally lost amongst a background of political dissonance and the typical race for advantage.

At this time the holistic model for a US space policy perspective offers radical potential. Both for practical levels of space development and exploration and for practical levels of civil society assurance and participation. How mankind uses the opportunity posed by technological and scientific innovation is a crucial issue that directly affects for the status of a future world. The intrinsic scale of a guided and well established international space development immediately reflects for the scale of the elevated and benign social continuums. Space development moves us beyond a national identity into an exponential global one and en route it establishes the voice of renewal as the sine non quo for our modern times and as an established engagement for a future role.

Political and cultural divergence is an inevitable force but it is not necessarily a destructive or incompatible one. The basis of a universal space age contingency is already well prepared because despite our obvious and essential national and cultural languages and differentiations, our universal values remain the valid ones. Space enabled informational assets may well provide the quantative mediums for international referendums but they do not construe for what lies outside of a universal appreciation of a human need. Collaborative venture provides a strategic and equitable convergence of national and international interests, a role for diplomacy that is neither more nor less than it has always been. Yet how modern space based technologies support that careful role and how much benefit the guided pathways of such an insightful and highly informed dialog propose as a global institution becomes far removed from any previous locale.

The sympathetic and collaborative discourse is the powerful and expedient one, today the international community has invited and awaits the US initiative for the way forward. Will the brilliant light of US innovation and democratic engagement serve for the purpose which has always been the intended one and will the lunar radiance soon show mankind the fulfillment that has lain dormant within the darkness of a human history.

The moon is both our mother and our infant, it was born in a secret and unknown way and yet it provides stability and the life giving tides. The mountains of the moon are the taller icons of our desolation and yet they contain the life giving energies of an epochal evolution.

Let us tilt our cap at the stars together, to see how and what we can create as international space venture, to learn together how the magnificent space vehicles of a future time will be manufactured and created. To know that people everywhere are watching such progress with pride because they are part of the unfolding story, to know that we had made all this possible because of our love for mankind, and that we had made the dangerous journey towards a planetary future the safer and the more bountiful one, one that had included for us all.