



Dark-Sky Park Program (Version 1.31)

International Dark-Sky Association

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*To preserve and protect the nighttime environment and our heritage of dark skies
through quality outdoor lighting*

Dark Sky Park Designation

Objectives:

- A To identify and honor protected public lands (national, state, provincial and other parks and notable public lands) with *exceptional* commitment to, and success in implementing, the ideals of dark sky preservation and/or restoration;
- B To preserve and/or restore outstanding night skies;
- C To promote protection of nocturnal habitat, public enjoyment of the night sky and its heritage, and areas ideal for professional and amateur astronomy;
- D To encourage park administrators to identify dark skies as a valuable resource in need of proactive protection;
- E To provide international recognition for such parks;
- F To encourage parks and similar public entities to become environmental leaders on dark sky issues by communicating the importance of dark skies to the general public and surrounding communities, and by providing an example of what is possible.

Benefits:

Achieving this designation brings recognition of the efforts a park has made towards protecting dark skies. It will raise the awareness of park staff, visitors, and the surrounding community. Designation as an IDA DSP (Dark-Sky Park) entitles the park to display IDA DSP logo in official park publications and promotions, and use of this logo by commercial or other groups within the community when identifying the park area itself (e.g. an organization can say “located in Grand View Park, an IDA DSP” or other words to the same effect). IDA will maintain a web page identifying and describing all DSPs. The park agency may also identify IDA as a park partner.

Eligibility (A-E must each be met):

- A All protected public lands, whether managed by national, state, provincial, or local agencies, are eligible. These may include parks, refuges, forests, wilderness areas, monuments, protected rivers, or other categories of protected lands. For this document, they are generically referred to as “parks;”
- B Park must provide the opportunity for public nighttime access. A portion of designated land may meet this requirement, or access must be available for a portion the night;
- C Park must have an outstanding dark sky resource relative to the population it serves and have locally, regionally, or nationally significant dark sky resources;
- D Park night sky must be of minimum quality or better— at a minimum the Milky Way should be visible and sky conditions should approximately correspond to limiting magnitude 5.0 or Bortle Class 6.
- E If a park unit is over 50,000 ha (123,550 acres/193 square miles), a portion of the park may be designated as a Dark Sky Park. This portion must incorporate relevant park developed areas that serve the designated DSP area;

Minimum requirements for all parks (A-E must each be met):

- A A quality comprehensive Lighting Guideline or Lightscape Management Plan with the following minimum standards:
 - 1. Fully shielded lights standard throughout the park. When lights are for special purposes or historic preservation compliance, lights under 1000 lumens initial lamp output may be

unshielded (non-fully shielded). When such unshielded lights are used, impacts to the lightscape must be addressed, AND;

2. Methods for addressing whether an area should or shouldn't be lit, when an area should or shouldn't be lit, use of guidance lighting, lit signs, tower lighting, and appropriate lighting amount, AND;
 3. Methods for addressing what type of lamp (incandescent, fluorescent, high-pressure sodium, etc.) should be used for particular tasks and in particular areas. utilizing appropriate energy efficiency technology and methods for minimizing impact to wildlife, stargazing activities, and nocturnal scenery, AND;
 4. Lighting guidelines should conform to or surpass agency or departmental policy on lighting and dark sky protection as well as other applicable guidance and laws (e.g. environmental leadership programs, agency orders, wilderness act, energy management guidelines).
- B Park commitment to dark skies and lightscape management, as shown by:
1. Park recognizes dark skies as an important natural, cultural, or scenic resource value as evidenced by inclusion in approved management documents (e.g. General Management Plan, Resource Management Plan, Facility Development Plan), AND
 2. Two-thirds (67%) of existing outdoor lighting fixtures conform to the lighting guidelines (or an alternative fraction approved by IDA Board). All lights upon park public lands within the DSP are to be included in this assessment, AND
 3. All lighting (100%) on park land (whether operated by park or other entity) conforming, or committed to becoming conforming, with written park lighting guidelines, AND
 4. The importance of dark skies/natural darkness and the benefits of good lighting should be part of park interpretation/outreach programs. If park typically provides interpretive programs, then dark skies should be one of the central themes communicated through on-site interpretation. If interpretive programs are not typically offered, then publications, flyers, press releases, media, or other outreach are appropriate substitutes, AND
 5. Park has set a leadership example in the restoration of dark skies by implementing one of the following:
 - a. Producing at least 1 "night sky friendly" lighting project that is publicly visible and interpreted, OR
 - b. Involving at least 2 external partners in dark sky restoration efforts (e.g. chamber of commerce, power utility, university research, tribal nations, environmental groups, conservation groups, natural history association), OR
 - c. Cooperation with at least 2 nearby municipalities that results in adoption of lighting codes that improve sky conditions in the park, OR
 - d. Inventorying and monitoring night sky quality and using results to educate the public, OR
 - e. A combination of a-d above or an alternative restoration project may be suggested.
- C IDA may request stricter or alternative requirements in some circumstances.
- D Once established, park must erect and maintain a sign indicating Dark Sky Park designation along roadway entrance, along a footpath entrance if no roadway exists, or a visitor contact center. Sign should include IDA DSP text and logo. With IDA Board of Directors approval, an alternative wording may be used, such as Dark Sky Wilderness, Dark Sky Refuge, or similar. The park may include the awarded tier if desired.
- E Designation is permanent, but is subject to regular review by IDA and possible revocation if minimum requirements are not maintained.

Sky Quality Tiers:

Once the minimum requirements have been met, a DSP is designated by IDA at one of three levels– Gold, Silver or Bronze indicating the absolute sky quality of the site. *Gold* corresponds to pristine or near-pristine night skies that average close to natural conditions. *Silver* corresponds to nighttime environments that have minor impacts from light pollution and other artificial light disturbance, yet still display good quality night skies and have exemplary nighttime lightscares.

Bronze corresponds to areas not meeting the requirements of Silver, yet still offering people, plants and animals a respite from a degraded nocturnal environment. The minimum quality night sky described under Eligibility section D must be met in order to attain Bronze DSP designation. The determination of whether the minimum sky quality standard has been met and what tier will be awarded will be decided by IDA based on submitted information and other available information. Methods for how IDA will determine sky quality tier are found in the Submission Guidelines.

Park Process:

- A Nomination by IDA member who has inspected the park, with supporting signatures of a least two additional IDA members from outside the managing agency receiving the nomination;
- B Supporting information sent to IDA to demonstrate that the minimum requirements have been met;
- C Official letter to IDA supporting nomination from park superintendent or administrator;

IDA Process:

- A Once submission packet is received from park, review by IDA to determine if minimum requirements have been met and if stricter or alternative requirements should be imposed;
- B Determination of sky quality tier- Gold, Silver or Bronze;
- C Approval of nomination by IDA Board of Directors by a majority vote, or denial with reasons and recommendations;
- D If approved, awarding of DSP designation and listing on IDA website;
- E Periodic checks on DSP to ensure minimum standards are still met, objectives of the program are being upheld, and adequate progress is being made.

Definitions:

Bortle Class- A qualitative method of rating night skies based on visual observations. Developed by John Bortle, the scale ranges from Class 1 (pristine) to Class 9 (strongly light polluted).

Dark Sky Park- A park or other public land possessing notable starry night skies and natural nocturnal habitat where light pollution is mitigated and natural darkness is valuable as an important cultural, scenic, and natural resource. May be part of a larger Dark Sky Preserve, or may not. [Dark Sky Parks are the focus of this document]

Dark Sky Preserve- A large area of high quality dark skies with associated partnerships between protected public lands, municipalities, and private interests that is managed to minimize light pollution. Preserve status is maintained through education, formal agreements, laws, management plans, and/or codes addressing multiple aspects of natural darkness. Such preserves are not presently designated by IDA, but have been established in numerous areas according to a variety of local procedures and standards.

Fully Shielded- A lighting fixture that directs all light downward (below the horizontal) except for incidental reflections from supports or other structures.

Glare- A common condition of natural and artificial lighting caused by excessive contrast between a bright source or brightly lit area and a dark surrounding area. Glare can cause viewers to look away, squint, be annoyed, or compromise their ability to perform vital visual tasks.

Guidance Lighting- Lighting that provides for navigation and safety via very low brightness lamps to mark a path, edge, or roadway instead of the traditional approach of illuminating surfaces.

Illumination- The amount of light falling onto a surface measured in lumens per unit area. The *footcandle* is equal to one lumen per square foot. A *lux* is 1 lumen per square meter, approximately 1/10th of a foot-candle.

Interpretation- A communication process, designed to reveal meanings and relationships of our cultural and natural heritage, through involvement with objects, landscapes [or lightscares], and sites.

Light Pollution- Principally (in this document) the illumination of the night sky caused by artificial light sources, decreasing the visibility of stars and other natural sky phenomena. Also includes other incidental or obtrusive aspects of outdoor lighting such as glare, trespass into areas not needing lighting, use in areas where or at times when lighting is not needed, and disturbance of the natural nighttime landscape.

Lightscape- The total environment created with natural and/or artificial light (here pertaining to the outdoor nocturnal scene).

Limiting Magnitude- The dimmest star that can be seen by the unaided eye. Higher number correspond to fainter stars and thus darker skies. As light pollution increases, contrast is decreased between the background of space and stars, allowing only brighter stars (lower magnitude) to be seen.

Lumen- The unit used to describe the amount of light radiated by a source.

Outreach- Interpretation for the public that takes place outside of the park or prior to their visit.

Guidelines on DSP Process:

Nomination:

The nomination is initiated by an active IDA member who has personally reviewed a park's outdoor lighting and commitment to natural lightscapes. The nomination is a joint effort between park administration and initiating IDA member, and is cosigned by two additional IDA members. Members are encouraged to correspond with IDA DSP designee or IDA Board of Directors throughout this process—from first consideration of a DSP through the final submission package.

The following are typically included in a DSP submission:

- 1) Map of area to be designated. If area is a portion of a larger park, description of why this portion was chosen
- 2) Letter of nomination support from appropriate park administrator
- 3) Management documents supporting dark skies and/or natural lightscapes as a valued resource
- 4) If it exists, agency or departmental policy on outdoor lighting and dark sky protection
- 5) Any documentation of sky quality, light pollution measures, satellite pictures, maps, photographs, or other evidence that demonstrates the noteworthiness of the resource
- 6) Documentation signed by park administrator showing a Lighting Inventory of the park and plan to bring all outdoor lighting into compliance with the Lighting Guidelines
- 7) Brief description of interpretive program or interpretive products related to dark skies/natural darkness
- 8) Park Lighting Guidelines
- 9) Documentation or description of restoration project (e.g. lighting project, community outreach, etc)
- 10) Proposed alternative wording for DSP (e.g. Dark Sky Wilderness, Dark Sky Refuge, etc), if desired

Approval or Denial:

Approval of a DSP nomination requires a majority vote by IDA Board of Directors. This decision should be made by referencing the submission package, nomination recommendation by IDA member, and other communications regarding the park's suitability as a DSP. The Board should keep in mind that minimum requirements can be made more strict in situations where IDA feels there is inadequate commitment or the park is not meeting its potential. Consider also that the submission package may vary in detail depending on the staff resources at each park. Once approved, the DSP designation should be documented, posted on the website, and suitably announced as soon as practical.

If a nomination is denied, IDA should clearly identify the reasons for rejection and outline what steps should be taken to eventually meet DSP requirements. Partial resubmissions should be allowed at the discretion of IDA.

IDA should designate a panel of IDA members to assist parks with DSP certification, preparing their submission package, and providing recommendations to the Board. IDA should further designate one of the panel members as a point of contact for the program.

Lighting Inventory:

Producing a Lighting Inventory for some parks can be a lengthy task. Therefore, when there are numerous outdoor lights it is acceptable to group lights by facility or area. Whether the fixtures are fully-shielded, are special purpose fixtures under 1000 lumens, and what the lighting application is should be noted for each fixture or group of fixtures. Lighting Inventory should also include a plan or stated commitment to bring all outdoor lights into compliance with the Lighting Guidelines. Daytime photographs or manufacturer diagrams of each fixture type should also accompany the inventory. Contact IDA for clarification or to resolve Lighting Inventory difficulties.

A sample table from portion of a Lighting Inventory:

Location	Fixture(s)	Fully-Shielded	Special Purpose <1000 lumens	Application	Conformity with Lighting Guidelines
Visitor Center	12 fixtures on 14' pole, 70 watt HPS	YES	NO	Parking lot, timer off at 10pm	YES
	2 overhead door lights, 100 watt MH	YES	NO	Building egress	YES
	6 bollard (post) lights, 32 watt compact florescent	NO	NO	Walkway	NO- see plan
Historic Cabin	2 warehouse style lights over doorways, 60watt	NO	YES	Historic Preservation, egress	YES
Maintenance Yard	6 wallpacks, unknown lumens, 250 watt MH	NO	NO	Occasional night operations	NO- see plan
	8 glarebusters, 13 watt compact fluorescent	YES	NO	Egress, security	YES

Lamps of 1000 lumens output and less include: 60 watt incandescent and less; 60 watt tungsten (quartz) halogen and less; 15 watt fluorescent and less; 13 watt compact fluorescent and less.

Lighting Guidelines:

Park Lighting Guidelines should meet or exceed agency or departmental policies regarding outdoor lighting and should embody good lighting ethics— using light only when it is needed, where it is needed, and in the proper amount. Thus most outdoor lighting fixtures should be fully-shielded and have appropriate use of timers and motion sensors. There should be few instances when this simple guidance is insufficient. Because night sky friendly lighting is inherently efficient, energy use and operational cost reduction goals can be incorporated in this lighting.

The DSP program uses the term “Fully Shielded” as opposed to the more technical term “Full Cut-off.” This allows for slightly more variation in fixture type and can be identified without complex photometric reports. It should be clear that “Fully Shielded” defines not only the fixture hardware, but the mounting and installation also. Questions on whether a fixture meets this definition can be relayed to IDA in advance of the submission.

Using the proper amount of light is another important element for good lighting and should be incorporated into Lighting Guidelines. Because of the dark surroundings found in parks, the required illumination levels are often much *less* than in urban or residential settings. As with proper shielding and directing of light, the proper amount is important in providing the best visibility, safety, and security. There are several optional methods to constrain lighting levels and illumination:

- 1) Lighting levels (illumination) may be prescribed within a range of values, typically measured in footcandles or lux. This requires the use of a light meter to verify illumination levels. Without software modeling or extensive lighting experience, it is possible that new lighting installations may produce more or less illumination than necessary, and force an expensive change. This is the most accurate method for controlling illumination levels but requires planning and a certain level of technical ability. This approach is better suited to large developed parks with more sophisticated facility management.
- 2) Setting a maximum and minimum lamp lumen output for types of fixtures or applications. This gives an approximate method to design illumination levels. Typically, this is done for several categories of fixture (e.g. entryway, walkway, parking lot). This is a simple approach and is suitable for most parks, but it is not as accurate as setting illumination levels (#1 above).
- 3) Illumination levels can be more accurately designed by integrating mounting height into lumen limits (#2 above). For example, a maximum lumen limit 220x pole height (in meters) squared is a useful guideline: a 6 meter (20') pole would limit to about 8000 lumens; an entry light mounted 2 meters (7') above the ground by a doorway would be limited to 880 lumens. Different multiplication factors may be designated for different applications. Maximum pole heights should

also be prescribed under such a system, recommended at 25'. This method adds some complexity but gives tighter control over lighting.

- 4) Total lumens per acre can be prescribed to developed areas. This prevents negative cumulative effects from too many lights. This method is best used when coupled with method #1, 2, or 3 above.
- 5) Other methods and specifications for controlling light levels are available from IDA or the Illuminating Engineering Society of North America.

The use of lighting zones, as is done in the IDA Model Lighting Ordinance and several other city codes is a useful tool within a lighting guideline. In parks, these may be a zone of absolutely no lighting (no equivalent in the IDA MLO), zones of minimal light use (Lighting Zone 0 in IDA MLO), and developed high use areas (Lighting Zone 1 in IDA MLO). The use of higher illumination lighting zones is probably not necessary.

While shielded lights typically reduce glare when viewed from the side, there are situations where even fully-shielded lights may cause an unacceptable impact. One example is when the light is elevated over surrounding terrain, perhaps on a mesa, hilltop, water tank, or similar structure. The glare from these lights can be viewed from many kilometers away and potentially pose a negative impact to wildland values, cultural landscapes, wilderness, and wildlife. This issue should be included in the Lighting Guidelines if it is germane to the park

Protecting wildlife and nocturnal habitat often requires greater consideration and constraints than lighting to protect night sky visibility. Most parks will have ecological issues that need addressing in Lighting Guidelines. The best approach may require consultation with wildlife experts, but a few methods are listed here for consideration:

- 1) Designation of wildlife corridors, buffer areas around streams, shorelines, or other ecological important edges where lighting is not allowed or is permitted only when fully shielded at very low brightness.
- 2) Use of narrow spectrum lighting that avoids impact to certain species. This proper color of light will vary from species to species and habitat to habitat. Yellow incandescent lamps ("bug" lights) and low-pressure sodium lighting (LPS) are frequently good choices, but not always.
- 3) Turn off lights with timers or motion sensors to minimize duration of impact. Omit lighting during certain periods of the year that are known to be critical to wildlife (e.g. bird migration periods).
- 4) Use of only strobe lights (quick flashing lights that dim completely between cycles) for buoys, towers, and markers to minimize bird disorientation.

Requirements for the DSP allow for the use of 1000 lumen unshielded lights for special purposes. This provision is to allow for the use of historic lights or lighting required by historical preservation mandates, guidance lighting, or other unique requirements. The approved special uses should be stated in the lighting guideline. IDA will scrutinize these uses to ensure that park lighting is a suitable example of good lighting for the public and protects the nighttime environment to the maximum practical extent. IDA may request additional descriptions, photographs, or drawings of these lights. These lights are not exempt from the lighting guidelines, and must still be designed to minimize impact to the lightscape.

While outdoor lights are used mostly for safety purposes, a park may incorporate lights that have other uses. Examples include lit signs, flags, vending machines, building façades, statues and plaques. Though these are not forbidden in Dark Sky Parks, the Lighting Guidelines must provide constraints on these types of generally non-essential lighting. Such lighting should have lamp lumen or illumination limits, timing limits, and be shielded if possible. IDA will scrutinize this section of the lighting guidelines to ensure the park provides a good leadership example to the public.

Finally, each lighting application should be examined for appropriateness, timing and duty cycle, and energy efficiency. For example, it is expected that the Lighting Guidelines would designate areas that should have no permanent lighting. Other types of lighting such as infrequently used buildings should have motion sensor security lights. Such limitations are important in lowering the overall impact of artificial lighting, especially considering solar power lighting is now viable in remote locations.

Sky Quality Tier Determination:

A variety of indicators are used to determine absolute sky quality at the Gold, Silver, or Bronze tier. The lower end of the Bronze tier coincides with the minimum sky quality requirement for DSP designation. This objective decision is made based on many factors, with no one factor being the key decider. Indicators may conflict because of differences in geography, climate, seasonality, view of horizon, elevation, or other factors. No single indicator should force a tier determination. For example, an area may be awarded Silver despite only having limiting magnitude 5.8 if the majority of other factors support the Silver designation. In many cases, full information may not be available and the process must proceed with only readily available information.

Within a proposed DSP boundary there will be a range of sky conditions, which presents a challenging situation from which to make an assessment. In general, the lightscape condition where night visitation and interpretation should be assessed, but IDA may require additional areas to be assessed.

It should be made clear that the expectations of a DSP to promote dark skies and natural lightscapes are equal among designees, regardless of their tier status– Gold, Silver, or Bronze.

The following table provides guidance to IDA in determining tier:

Indicator	Gold	Silver	Bronze
Philosophy	Nighttime environments that have negligible to minor impacts from light pollution and other artificial light disturbance, yet still display outstanding quality night skies and have superior nighttime lightscapes.	Nighttime environments that have minor impacts from light pollution and other artificial light disturbance, yet still display good quality night skies and have exemplary nighttime lightscapes.	Areas not meeting the requirements of <i>Silver</i> , yet still offering people, plants and animals a respite from a degraded nocturnal environment and suitable for communicating the issue of light pollution and connecting people with the many aspects of the night sky.
Artificial Light and Skyglow	Typical observer is not distracted by glary light sources. Light domes are only dim and restricted to sky close to horizon.	Point light sources and glary lights do not dominate nighttime scene. Light domes present around horizon but do not stretch to zenith.	Areas with greater artificial light and skyglow than <i>Silver</i> , but where aspects of the natural sky are still visible.
Visual Limiting Magnitude	Equal or greater than 6.8 under clear skies and good seeing conditions	6.0 to 6.7 under clear skies and good conditions	5.0-5.9 under clear skies and good seeing conditions
Bortle Sky Class	1-3	3-5	5-6
International Astronomical Union Definition	Unpolluted sky, less than 10% artificial light increase at 45° altitude	Light Polluted Sky (minor to moderate)	Light Polluted Sky (moderate)
Schaaf Class	7+	4-7	3-4
Observable Sky Phenomena	The full array of visible sky phenomena can be viewed— e.g. aurora, airglow, Milky Way, zodiacal light, and faint meteors.	Brighter sky phenomena can be regularly viewed, with fainter ones sometimes visible. Milky Way is visible in summer and winter.	Many sky phenomena cannot be seen. Milky Way is faintly seen when pointed out to the average person, as is the Andromeda Galaxy.

Nocturnal Environment	Area is devoid of obvious lights that can cause wildlife disorientation. Artificial light levels are thought to be below the threshold for plant and animal impact. Ecological processes related to nocturnality are unaltered. No lighting atop towers or buildings within park boundary.	Areas that have minor to moderate ground illumination from artificial skyglow. Lights that may cause disorientation to wildlife are distant. Disruption of ecological processes is minor with no impairment to plants or wildlife.	Areas with greater nocturnal impact than <i>Silver</i> , but where photo-based ecosystem processes are still functional.
Cinzano et. al .2001 Sky Brightness Model	< 0.11 artificial light contribution at zenith (as a fraction of natural background)	0.11-3.0 artificial light contribution at zenith (as a fraction of natural background)	3.0-9.0 artificial light contribution at zenith (as a fraction of natural background)
NPS Method Total Sky Brightness Above 20° Alt.	<i>Pending- propose -6.75</i>	<i>Pending- propose -8.00</i>	<i>Pending- propose -10.00</i>
Unihedron Sky Quality Meter	<i>Pending- propose 21.75</i>	<i>Pending- propose 21.00</i>	<i>Pending- propose 20.00</i>

Further information on the Bortle Dark-sky Scale can be found at:

http://skyandtelescope.com/resources/darksky/article_81_1.asp

Further information on the Schaaf Scale can be found at:

<http://laps.noaa.gov/albers/lp/gwpaper/lppaper.htm>

Further information on Sky Brightness Model by Cinzano et. Al. can be found at:

<http://www.inquinamentoluminoso.it/dmsp/>

A few references on Visual Limiting Magnitude can be found at:

<http://www.imo.net/visual/major/observation/lm>

http://www.phys-astro.sonoma.edu/observatory/observers/limiting_magnitude.html

The George Wright Forum, published by the George Wright Society, Hancock, Michigan, USA, 18:4, 2004.

Note: According to Cinzano et Al. 2001, 1% of US population lives in gold areas, 16% in silver, and 21% in bronze. Compare that to Australia at 29%, 9%, and 25% or Canada at 3%, 14%, and 12% or Germany 0%, 34% and 41%. Thus Gold DSPs will likely be designated in areas of sparse population, but may vary from country to country.

Reassessment of DSP Designations:

To assure that DSPs continue to be exemplary in their protection and restoration of natural lightscapes, IDA will periodically re-assess DSPs. This will assure that parks continue to meet the minimum requirements, are sustaining partnership and interpretation efforts, and are making adequate progress toward 100% compliance with lighting guidelines. It is expected that a simple assessment will be made at approximately 5-year intervals, relying upon conversations with park management, on site checks by the original nominating member, or other creative and low cost means to ascertain the park's commitment to the DSP designation. If questions or concerns remain after this cursory review, it may then be necessary for IDA make additional efforts and/or the DSP to submit evidence defending their status.

DSP Program Review:

It is recommended that the DSP program be reviewed 2 years from initial approval and at 5-year intervals thereafter. This will keep documentation current, provide clarification of common questions, close loopholes, and keep the program responsive to evolving public attitudes, technology, and scientific understanding. It will also be important to compare this document with other competing certifications that may arise. Other suggested considerations include: application and acceptance rate, balancing participation

in the program with the prestige it bestows, open submission vs. call for applications, target participation rates at each tier, reassessment processes, and workload.

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Approval:

Approved with minor edits, IDA Board of Director's meeting, March 18, 2006

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V. 1.3 IDA edits completed, March 23, 2006
V. 1.31 Draft tier recommendation for Sky Quality Meter and NPS Method
V. 1.31 Minor addition to DSP Program Review