Cerro Tololo Inter-American Observatory
Community Science and Data Center
International Gemini Observatory
Kitt Peak National Observatory
Vera C. Rubin Observatory

# NOIRLab Style Guide — English

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# Revision log

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| 9 Sept. 2019 | Peter Grimley, draft v.0.5 done based on the NOAO Style Guide authored by Sharon Hunt, and the ESO/IAU Style Guide. |
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# 1. General remarks

This NOIRLab style guide is intended to ensure consistency in the use of language and technical terms across external English-language documents emanating from NSF NOIRLab for external audiences. It is not always easy to maintain complete consistency across all documents, particularly in regard to little-used words or terms; however, consistency within a given document is important.

That said, some exceptions to the specifications are necessary for communications aimed at the community of users of NOIRLab facilities ("users"). These are to be found in Section 26 below.

Where it is necessary to clearly separate example text in this guide, it is in blue.

The URL for this document is:
https://noirlab.edu/public/media/archives/techdocs/pdf/techdoc096.pdf
The Spanish Style Guide is at:
https://noirlab.edu/public/media/archives/techdocs/pdf/techdoc097.pdf

For questions or updates please contact info@noirlab.edu.

# 2. The name of the organization

The full name of the organization is U.S. National Science Foundation National Optical-Infrared Astronomy Research Laboratory, but the long form is not used except in legal documents. The shortened form — NSF NOIRLab — is preferred and should be used in *any* communication *without* the need to introduce the full form first. This may be further shortened to NOIRLab in internal communications, and also in external communications provided the term NSF NOIRLab has previously been introduced. In summary:

- NSF NOIRLab on first occurrence in each article
- NOIRLab in next and subsequent occurrences

From NSF's latest brand standards manual: "In written contexts, the agency must be referenced using 'U.S. National Science Foundation' in the first reference and in logo lockups, followed by 'NSF' on subsequent mentions." (page 6)

In summary:

1. Use **NSF NOIRLab** instead of NSF's NOIRLab.
2. In the first reference in texts (or places without a strict character limit) use the expanded version of NSF: **U.S. National Science Foundation**. This includes always **expanding NSF** before using NSF NOIRLab.

3. Use **NSF** or **U.S. National Science Foundation** before NSF-owned facilities such as the Nicholas U. Mayall 4-meter Telescope or Kitt Peak National Observatory, but avoid repetition of **NSF** when mentioning multiple facilities or instruments.

The three locations are generally referred to as Hawai‘i (with ‘Okina: Ctrl-0145 on PCs, and alt + ] on MacOS), Arizona and Chile.

Program is capitalized. And NSF NOIRLab currently incorporates five Programs: KPNO, CTIO, CSDC, Vera C Rubin Observatory Operations, and Gemini Observatory.

Credits are written as Credit: Program/NOIRLab/NSF/AURA/Name (affiliation)

Organizationally KPNO, CTIO are part of the Mid-Scale Observatories (MSO).

# 3. Spelling

Standard U.S. spelling is used in all documents.

# 4. Active or passive voice?

The passive voice can be used for general statements where no actor is specified — for example, many observations have been made of the Crab Nebula — but should be avoided where a specific actor is referred to — for example, John Jones gave a talk, rather than a talk was given by John Jones. Occasional use of the passive is, however, OK to provide variety.

# 5. Use of initial capital letters

Initial letters of proper nouns (names) and titles are capitalized — prepositions and articles in names and titles are not in general capitalized, but you should always follow the convention applied by an individual or an institution — so *always check if in doubt*.

The first word of a sentence is capitalized *unless* it is a term that conventionally begins with a lower-case letter. That exception is likely to be rare, but here’s an example:

> e-MERLIN is the UK’s national radio telescope interferometer.

The following are also capitalized:

Earth
Sun (but sun in expressions such as the galaxy contains a billion suns)
Moon (only when referring to ours; use moon when referring to those of other planets)
Jupiter, Jovian

Mars, Martian
Solar System
Milky Way
Andromeda Galaxy
Galactic, when referring to the Milky Way, so: Galactic Bulge, Galactic Disk, Galactic Halo, etc.)
Our galaxy, the Milky Way
the Big Bang
the Universe

The following are not capitalized:

compass points, and associated adjectives — e.g., south; southern hemisphere
active galactic nucleus (but AGN is in capitals)
black hole
dark matter, dark energy
galaxy (except in a name, such as Andromeda Galaxy)
nebula (except in a name, such as Tarantula Nebula)
moon (of another planet)

### Use of capitals in headings

The first word of a heading should be capitalized.
All nouns, pronouns, adjectives, adverbs and verbs in a heading should be capitalized.
Prepositions of more than four letters should be capitalized.
Articles, conjunctions and prepositions of four or fewer letters are lowercase.

When using hyphenated words in a heading, the first element is always capitalized and the second element is capitalized unless it is an article, conjunction or preposition, or the first element is a prefix.

Examples of hyphenated words in headings:

- Run-in
- Twenty-Two
- High-Status Job
- Anti-intellectual
- Pre-order

The first word of a subheading should be capitalized, as should any other words conventionally capitalized. The rest of the subheading should be in lower case.

## 6. Plurals

Non-English plurals (i.e. not ending in s) are gradually falling out of use in favor of a plural form in s.

For example;
white dwarfs, not ~~dwarves~~
antennas (unless referring to an insect; as in the Antennae Galaxy)
formulas, not ~~formulae~~

The following, however, retain their original forms:
nebulae
supernovae
ephemerides

# 7. Italics

Italics are used for:

— book titles and journal names (except when the journal name or abbreviation appears in the list of references);
— names of newspapers or magazines;
— quotations from individuals or excerpts from other works (see the section on Quotations): for example, *"We are thrilled to welcome Patrick McCarthy to AURA to lead NSF NOIRLab,"* said AURA President Matt Mountain.;
— foreign words that are not commonly used in English (i.e., that do not appear in an American English dictionary, Webster's being the obvious example). So, for example, inter alia, and vis-à-vis would not be italicized, as they do appear in Webster's.
— names of outreach programs/events: e.g. *Journey Through the Universe*.

Italics are not used for:

— names of websites
— names of films or other visual material
— titles of written publications that are not books (for example, the NOIRLab Style Guide).

# 8. Emphasis

It is often necessary to give particular emphasis to a word or phrase and there are a number of ways of doing this — underlining, using an italic font, placing in inverted commas.
We prefer to *italicize* words for emphasis, but care should be taken to avoid overdoing it.

# 9. Compounds and Hyphenation

Note that a hyphen is not the same as an en dash or an em dash — see section on Use of hyphens and dashes below for the use of dashes more generally.

*Compound adjectives* are usually hyphenated — for example, high-resolution spectrum, two-dimensional array — and this often extends to examples with three, or even more, elements — for example, 30-meter-class telescope. However, this can sometimes get pretty clumsy, so where there is no ambiguity, the hyphen(s) may be omitted. Some specific examples are:

star-forming (but star formation)
planet-forming (but planet formation)
ground-based
space-based
metal-rich/poor
state-of-the-art

Note that an adjective following an adverb is not a compound adjective: so, a highly productive telescope, not ~~highly-productive~~.

*Written fractions* are hyphenated when they are used adjectivally — for example, a two-thirds majority; a one-eighth portion. They are not hyphenated when used nominally — for example, three quarters of the nights were cloudy.

*Compound nouns* vary greatly and are largely a matter of preference — we use the following in particular:

X-ray
light-year
H-alpha (but Hα)

*Prefixes* tend to be followed by a hyphen, especially (but not always) when the prefix ends in a vowel and the following word begins with a vowel. For example:
far-infrared
near-infrared
pre-existing
re-entry
pre-production

Specific exceptions are:
milliarcsecond
submillimeter

The following are not hyphenated:

gamma ray (but gamma-ray when used as an adjective; so it's gamma-ray telescope)

Hyphens should nevertheless be used to avoid ambiguity when different meanings would involve the same spelling — for example re-cover as against recover, un-ionized as against unionized.

See also the next section on units for further advice on the use of hyphens.

# 10. Numbers, units & equations

Whole numbers up to nine are written as words; 10 and above are written using Arabic numerals. Try to avoid starting a sentence with a number greater than nine; A hundred or A thousand are OK to use instead of the numerals, but 3156 looks odd at the beginning of a sentence.

Commas are used to separate the thousands in numbers ten thousand and above — for example, 9876; 10,000; 10,345,897.

When numbers are used to represent a range, they are separated with an en dash (see below), without spaces: 4–5.

The en dash is also used for the minus sign in negative numbers: –42.

Do not use superscripts for ordinal numbers (21st, 43rd and suchlike).

Names of common units should in general be used in preference to the symbols.
Symbols may exceptionally be used, but only where appropriate to the audience and where there is no ambiguity: for example, Å for Ångstrom, µm for micrometer/micron, m for meter.

For temperature, the symbols (°C and °F) may be used, with a space between the number and the symbol and no space between the ° and the C or the F. And remember that it's kelvin, not ~~degree(s) kelvin~~ or ~~degree(s) Kelvin~~ and temperatures are referred to as 100 kelvins or 100 K.

There are exceptions; for example, we use the full forms arcminute and arcsecond — we do not use the ‘ and “ symbols. So, for example: the resolution was on the order of arcseconds; the resolution was 1 arcsecond.

The astronomical unit symbol is written as au (cf. IAU Theme Measuring the Universe).

There is a space between a number and its unit symbol — for example, 39 m; 400 km — *unless* the number-unit combination is being used as an adjective (see below).

Compound units have spaces between each unit element — for example, 40 km $s^{-1}$.

We use metric units for common measures, followed by the (approximate) Imperial equivalent in parentheses; for example, 16 km (10 miles) and 27 °C (81 °F).

An exception is telescope diameters, which are always given as metric only, unless the Imperial form is well established — for example, the 100-inch on Mt. Wilson.

When a number and its unit are used *adjectivally*, they are hyphenated. When they are used *nominally*, there is no hyphen. So, an 8-meter telescope has a diameter of 8 meters.

So, to summarize the foregoing:

8 meters is preferred to 8 m;
8-meter telescope is preferred to 8-m telescope (do not use ~~8 m telescope~~ or ~~8m telescope~~)
8-meter-class telescope, or where appropriate 8-m-class telescope

When mathematical symbols are employed, either in an equation or a stand-alone format, there are in most cases no spaces separating the symbols and numbers. For example:

~100
>100
100+200=300
[Fe/H]>–5
65%

However, spaces may be added if needed to aid readability, for example in more complex expressions.

## 11. One word or two?

As a compound term becomes more commonplace, a two-word or hyphenated form can reduce to a single word. We use the following in one-word form (see also the section on Preferred forms of some specific words and terms for further examples):

arcminute
arcsecond
blackbody (as an adjective; “black body” as a noun)
broadband
comoving
database
dataset
exoplanet
extragalactic
extrasolar
infrared
narrowband
online

percent
protoplanet(ary)
protostar
redshift
setup (as a noun; “set up” as a verb)
spacetime
supermassive
ultraluminous
ultraviolet
webpage
website

The following remain as two separate words:

data point
gamma ray
lightcurve
point spread function
star formation (NB no hyphen: but “star-forming region”)
step change

Further examples are given in the section on Preferred forms of some specific words and terms.

# 12. Abbreviations, initialisms and acronyms

Abbreviations, initialisms and acronyms are ways of shortening a word or a series of words to avoid having to repeat the whole thing many times within a text.

An *abbreviation* is a shortened form of a word, for example, arcsec instead of arcsecond. Usually (but not always) the abbreviation is indicated by a period following the truncated word. Grammatically, an abbreviation behaves just as the whole word would.

An *initialism* is formed of the initial letters of the words making up the phrase, name or description being shortened. An *acronym* is an initialism that can be pronounced as a word. For example, NASA is an acronym as it can be pronounced; NSF is an initialism because it can’t be pronounced. It is, in addition, becoming increasingly common to construct “pseudo-acronyms” using any of the letters in a series of words in order to produce a shortened form that can be pronounced. A particularly tortuous example of a pseudo-acronym is the TRAnsiting Planets and PlanetesImals Small Telescope, or TRAPPIST.

An abbreviation or initialism/acronym should be introduced in parentheses after the expanded version of the name — for example, Cerro Tololo Inter-American Observatory (CTIO) — when the object first

appears. Thereafter the truncated version alone should be used, unless the full name is necessary or desirable for emphasis or clarity, or appears in a heading.

When an initialism/acronym is expanded, the letters making it up should be capitalized; for example, Gemini Near-Infrared Spectrograph (GNIRS). Take care when expanding pseudo-acronyms (as the above example of TRAPPIST illustrates) to make sure the correct letters are capitalized.

Abbreviations/initialisms/acronyms that are not in fact in common use, or indeed that do not appear in the rest of an article, are to be avoided — there is no point in reducing light ray to ~~LR~~.

For the most part, initialisms and acronyms are represented in capital letters — for example, NASA, NSF. There is no punctuation, so it's U.S. not US and NASA not ~~N.A.S.A.~~. There are exceptions to this, for example the use of U. to represent University. Occasionally an acronym deliberately includes lower-case letters — for example, GeMS is the Gemini Multi-conjugate adaptive optics System. And some acronyms in common use have become words in their own right and are written in lower case — for example, laser, radar.

The use of the definite article with an initialism or acronym is a bit of a minefield. A sensible (and indeed common) convention would be: an acronym, since it can be pronounced as a word, does not attract the definite article; for example, it's NASA not ~~the NASA~~. And an initialism that cannot be pronounced should be used with the article; for example, the VLT, not ~~VLT~~.
*However*, many organizations have chosen *not* to include the article when using their initialisms, for example: NSF, CTA, LSST. You just have to know!

# 13. Use of hyphens and dashes

> "*If you take hyphens seriously you will surely go mad.*"
> (style book of the Oxford University Press of New York)

The *hyphen* is used, without spaces:
— to join the elements of compound words (see the section on Compounds and hyphenation);
— between a number and its unit when used as an adjective (see the section on Numbers, units and equations);

The *en-dash* (longer than a hyphen) is used, without spaces:
— to separate numbers or dates to represent a span or range (for example, 4–5 times; 4–7 March; but not ~~4 March–7 June~~ (see below));
— for the minus sign
— to represent *to* or *and* between words of equal importance (for example, millimeter–submillimeter, optical–infrared);
— to join the names of two or more people to form an adjective (for example, Einstein–de Sitter Universe; Einstein–Podolsky–Rosen paradox).

If you introduce a span or range of dates across months with words like *from* or *between*, do not use the en dash. So, for example, between 4 and 7 March or from 4 to 7 March, *not* ~~from 4–7 March~~. Also use this style when the dates cross months; for example, from 4 March to 7 June.

The *em-dash* (longer than an en-dash) is used to separate elements within a sentence, where one might alternatively use brackets — or to separate two sentences without employing a period — as one might alternatively use a semicolon. It has a space before and after it.

## 14. Dates

Dates are written in the order day:month:year, with no punctuation. So, 29 May or 29 May 1919.
For a range of dates, use an en dash; for example, 4–7 March.

## 15. Quotations and quotation marks

Quotation marks are written in typographical form (curly): “ ” and not straight, as often happens when copy/pasting from the web: " " . You may need to look carefully to see which is which!

Quoted statements are written in italics.
They are enclosed within double quotation marks, except where a quotation appears within another quotation, in which case, single quotation marks are used.

If the quotation is embedded in a sentence, the quotation is terminated with a comma before the closing quotation mark.

A period (full stop) appears before the closing quotation mark if the quotation is embedded in, but falls at the end of, a sentence.

A period (full stop) is inside the quotation marks if the quotation is a stand-alone sentence.

Where a quotation is introduced with *says* or *asked* or something like that, it is preceded by a comma.

Where a quotation is embedded in a sentence but stands alone within it (i.e., is not introduced), it is preceded by a colon.

Longer quotes (a matter of judgment, but we adopt roughly 100 words) are separated from the surrounding text in a stand-alone block of text, usually indented. In this case, no quotation marks are used.

Single quotation marks are used to indicate a non-standard or novel use, and also to indicate that a word or phrase is being used as a euphemism or in a dubious way (hopefully not a feature of the texts we are dealing with!).

Single quotation marks are also used in headlines in place of full quotation marks.

Some examples:

"*This is surely the most important discovery in the history of science*," said the lead investigator.

The lead investigator said, "*This is surely the most important discovery in the history of science*."

The lead investigator was rather upbeat: "*This is surely the most important discovery in the history of science*."

According to the lead investigator,

> *This is surely the most important discovery in the history of science. It surpasses anything that has gone before and looks set to introduce a whole new paradigm for research. Nobody really believed that the Moon is actually made of cheese.* [and so on]

The institute Director, or 'Big Cheese', was well liked by all. (non-standard use)

We are well-aware of the increasing number of 'experts' offering advice on social media. (sneer quotes)

# 16. Punctuation

Punctuation is remarkably fluid, but for the sake of consistency, we adhere to the following.

## Period

A period (full stop) is used at the end of a sentence. There is only one space after a period, not two.

Most initialisms/acronyms (see above) are not punctuated — for example:
NASA not ~~N.A.S.A.~~

However, some frequently used abbreviations do include periods:
U.S.
et al.
*op. cit.*
*ibid*.
e.g.

i.e.
etc.

If an initialism/acronym is used in the plural, there is no punctuation before the *s* — for example, CCDs, *not* ~~CCD's~~ ~~or CCD-s~~. Similarly for decades — the 1980s.

## Apostrophe

As for the quotation marks, use curly ones, not '.

The apostrophe is used to indicate possession.
With singular nouns, and plural nouns that do not end in an s, possession is indicated by an apostrophe followed by an s. For example, the dog's tail; the children's books.
With plural nouns ending in an s, possession is indicated by an apostrophe following that s. For example, the dogs' tails.
When a singular noun ends in an s possession is sometimes indicated by an apostrophe following that s, as if the noun were plural. This is particularly noticeable in the case of names. However, we adopt the same convention for all singular nouns, as above. For example, John Jones's dog *not* ~~John Jones' dog~~.

The apostrophe is never used to indicate a plural (for example, ~~apple's 10c a pound~~).

## Colon

The colon essentially joins two closely related sentences where the second sentence expands on the first or makes it more particular. This may also be used to emphasize antithesis.

For example:

> The KPNO Visitor Center performs a vital function: visitors can learn about the work of the observatory. (expansion)
>
> Most observatories today are still operated by on-site staff: only a few are operated remotely. (antithesis)

See also the section on Punctuating lists for other uses of the colon.

## Semicolon

A *semicolon* is used to join two sentences where separate sentences would imply too much of a change of subject or emphasis. For example:

> The Moon is made of cheese; it is therefore difficult to land on it.

In most such cases, a conjunction — *and* or *but* — would do just as well. And two separate sentences would not be a crime.

See also the section on Punctuating lists for other uses of the semicolon.

### Comma

The comma is the simplest and most common way of dividing up a sentence into manageable chunks. Partly for that reason, it is often abused and a misplaced, or absent, comma can lead to confusion.

For example:

> Let's go and eat, Grandma and Let's go and eat Grandma mean different things.

A comma is commonly used to separate a series of items in a list (but see above the use of a colon and semi-colon).
In that case, the final element is preceded by the word *and,* which is preceded by a comma. For example:

> NSF NOIRLab incorporates KPNO, CTIO, CSDC, Rubin Operations, and Gemini Observatory.

Similarly, commas are also used to separate elements (clauses) of a sentence. For example:

> He ran down the hill, jumped over the fence, and plunged into the lake.

## Punctuating lists

Where a series of items is listed within a sentence:—

A colon is used before an explanatory list *following a complete sentence*. The list may have only one element. The elements of the list may then be separated by commas (but see below on the use of the semicolon). For example:

> NSF NOIRLab incorporates five Programs: KPNO, CTIO, CSDC, Rubin Operations, and Gemini Observatory.

> Only one of NOIRLab's Programs is not an observatory: CSDC.

The colon is, however, not necessary if the list forms part of the sentence, as in

> NSF NOIRLab incorporates KPNO, CTIO, CSDC, Rubin Operations, and Gemini Observatory.

Nevertheless, the elements of the list may be complex and may even contain their own commas, with the result that separating the elements with commas would introduce ambiguity. In that case, for the sake of clarity, the elements of the list should be separated with semicolons, and the list preceded by a colon. For example:

> A telescope comprises a number of important items: a primary mirror, the light-collecting element; a secondary mirror to intercept the light from the primary and send it to a focus; a number of instruments, which might include a spectrograph, an imaging device, or an observer; and a graduate student to blame when it all goes wrong.

and even

> A telescope comprises: a primary mirror, the light-collecting element; a secondary mirror to intercept the light from the primary and send it to a focus; a number of instruments, which might include a spectrograph, an imaging device, or an observer; and a graduate student to blame when it all goes wrong.

Where the listed items are presented vertically:—

Ensure that all elements of the list are in the same format and that each element follows consistently from the lead-in statement.

When the lead-in statement is a *complete sentence*, each list element begins with a capital letter and ends with a period. For example:

> We made the following observations:
>
> The star exploded in space.
>
> The aliens escaped.

When the lead-in statement is an *incomplete sentence*, each list element begins with a lowercase letter and ends with a semicolon. End the list with a period after the last list element. For example:

> I observed:
>
> a pen;
>
> paper;
>
> Saturn; and
>
> a space shuttle.

# 17. That, which and who

Whether or not to use a comma before the relative pronoun *which* needs careful thought, as the meaning can be significantly affected. Here are two examples:

He picked up the glass which was on the table.

He picked up the glass, which was on the table.

The first example implies that there were a number of glasses — one of them was on the table and it was that one he picked up.
The second example draws our attention to the glass he picked up and tells us that it was on the table. It does not imply that there were any other glasses.
The difficulty can most easily be avoided by using *that* in place of *which* in sentences of the first type. The distinction is then clear:

He picked up the glass that was on the table.

cf.

He picked up the glass, which was on the table.

That should not be used in sentences of the second type.

It is becoming increasingly common to use the relative pronoun *that* to refer to people, rather than *who*. For the sake of consistency, we only use *who*. So:

He is one of those people who are fascinated by astronomy.

*not*

~~He is one of those people that are fascinated by astronomy.~~

# 18. Titles

In press releases and other news, we do not use personal titles (such as Dr, Prof. and so on) *except* when protocol makes it necessary (for example, for heads of state, royals, elected government positions). In those exceptional cases, it will usually be necessary to consult a definitive source, since we cannot hope to cover all possibilities here.

# 19. References

*In the body of a text*:—

1 author: Smith (2007) OR (Smith 2007)
2 authors: Smith & Jones (2008) OR (Smith & Jones 2008)
3 authors: Smith, Jones, & Ryan (2010) OR (Smith, Jones, & Ryan 2010)
4 or more authors: Connors et al. (2011) OR (Connors et al. 2011)
2 or more papers qualifying the same remark: (Smith 2008; Towne 2007)

In the above examples (with the exception of the last), the first alternative is used when the author/paper is the subject of a sentence: for example, Smith (2007) has shown that the Moon is made of cheese. The second version is used parenthetically to indicate the source of a remark: for example, It has been shown that the Moon is made of cheese (Smith 2007). When there are a lot of references, we have the option to use footnote-like numbers in the text.

*In the list of references at the end of an article*:—

1 author: Smith, A. B. 2007, arXiv:0702.1234
2 authors: Smith, M. R. & Jones, S. Q. 2008, ApJ, 492, 111
3 authors: Smith, M. R., Jones, S. R., & Ryan, N. C. 2010, AJ, 444, 22
4 or more authors: Connors, M., et al. 2011, Nature, 475, 481

*Papers with the same author(s) and years*:—
Smith 2008a; Smith 2008b, etc.

Books should be referenced as follows:

> Author, date, title, edition, (city of publication: publisher), page number

Examples:

> Christiansen, W. N. & Högbom, J. A. 1985, Radiotelescopes, 2nd edn. (Cambridge: Cambridge University Press), 25
>
> Truss, L., 2003, Eats shoots and leaves, 3rd edn. (New York: Gotham Books)

In all the above, note the use of the ampersand, rather than the word “and”. “And” should not be used in these cases.

# 20. Use of some specific words and terms

[further examples will be added as needed]

## Laser Guide Star (LGS)

Lasers are never described as being fired or shot, to avoid misconceptions about military affiliations. Better words are, for instance, propagate or shine.

## Tohono O'odham Nation

Tohono O'odham Nation is written Tohono O'odham Nation or TON. Note that the punctuation mark is an apostrophe (opt + shift + ] on a Mac). As for tribe or tribal it depends on the use. Some examples (from jaceller@email.arizona.edu):

- Pascua Yaqui Tribe (PYT)
- The Tribal Chairman said…
- The Tribe is considering the proposal…
- The project is located on tribal lands.
- There are Tribal and federal regulations that need to be looked at first.

Or one can avoid tribal and tribe altogether and use acronyms/appreciations:

- The PYT President said
- The TON is considering the proposal

## Hawai‘i

Hawai‘i is written with an ‘okina (Ctrl-0145 on PCs, and opt + ] on a Mac).
The word "Hawaiian", however, does not have an ‘okina.

## However

When it has the sense of *alternatively* or *on the other hand*, *however* is always followed by a comma and is preceded by one when it is embedded in a sentence. For example:

> The Moon is not a planet. However, it is often mistakenly referred to as such.
>
> The Moon is not a planet. It is, however, often mistakenly referred to as such.

When it has the sense of *no matter how*, there is no comma after it; a preceding comma will depend on the sentence construction. For example:

> However big the Moon is, it is not a planet.
>
> The Moon is not a planet, however big it is.
>
> The tortoise could not catch the hare, however fast it ran.

## Further and farther

*Further* usually has the sense of *more* or *in greater detail*, whereas *farther* refers to distance. For example,

> We discussed the matter further while walking farther down the road.

## Owing to and due to

*Owing to* is an adverb and qualifies an action defined by a verb. For example:

> Owing to the bad weather, the train was delayed.
> or
> The train was delayed owing to the bad weather.

*Due to* is an adjective and follows the verb to be (although that is sometimes implied). For example:

> The late running of the train was due to the bad weather.

Common usage, however, is blurring the distinction as far as *due to* is concerned and it is often used where *owing to* would be expected. For the sake of consistency, we maintain the distinction as described above.

# 21. Journal names and abbreviations

A&A – *Astronomy and Astrophysics*
A&AR – *The Astronomy and Astrophysics Review*
A&AS – *Astronomy and Astrophysics Supplement Series*
Afz – *Astrofizika*
AJ – *The Astronomical Journal*
ApJ – *The Astrophysical Journal*
ApJL – *The Astrophysical Journal Letters*
ApJS – *The Astrophysical Journal Supplement Series*
Ap&SS – *Astrophysics and Space Science*
ARA&A – *Annual Review of Astronomy and Astrophysics*
BAAS – *Bulletin of the American Astronomical Society (AAS Meetings)*
JA&A – *Journal of Astrophysics and Astronomy*
MNRAS – *Monthly Notices of the Royal Astronomical Society*
PASJ – *Publications of the Astronomical Society of Japan*
PASP – *Publications of the Astronomical Society of the Pacific*
QJRAS – *Quarterly Journal of the Royal Astronomical Society*
RevMexAA – *Revista Mexicana de Astronomia y Astrofisica*

# 22. Preferred forms of some specific names, words and terms

90Prime
a.m.
Abu (infrared camera)
ad hoc
Adaptive Optics Roadmap
Aladin
alt-az
Altair (the Gemini AO system)
arcmin (avoid in general, but may be used in, e.g., diagrams to save space)
arcminute
arcsec (avoid in general, but may be used in, e.g., diagrams to save space)
arcsecond
Astro2010 Decadal Survey
Astronomy Night at the White House
ATST Project
backscatter
backup (as noun; back up as verb)
baseline
beam splitter
Big Astronomy in Chile through Dome+ project
Big Bang
binarity
birthline
Boötes
Bosque Fray Jorge National Park
break up (verb)
breakup (adj.; noun)
bright-time
broadband
build-up (noun)
Call for Proposals
Cassegrain
Celcius
Cerro Pachón
Chandra X-ray Observatory
citizen science (adj.; noun)
clean room

co-author
co-spatial
coelostat
cooldown
cost-effective (adj.)
coudé (note that this an adjective — it means “bent” — not someone’s name; it is not generally capitalized, unless it forms part of a specific proper name)
coudé feed
coudé room
cross-calibration
crosstalk (electronics term)
crowdsourced
data (plural noun)
database
dataset/s
daytime
decadal survey (but capitalize when part of proper name)
2020 Decadal Survey on Astronomy and Astrophysics [NASEM]
Deep Wide-Field Survey (NDWFS) (use abbreviation on second and subsequent text references)
delivered image quality
Demonstration Science
Dewar
diffraction-limited (adj.)
digital archive
dimensional: 2D; 3D
Doppler
Dunn Solar Telescope
e.g.,
Earth (not “the Earth”)
east (direction); east wing
échelle
eduroam
eigenprofile(s)
El Peñón
electro-mechanical
electro-optical
email
et al.
etalon
etc.,
Evershed effect
extrasolar planet

Fahrenheit or F (212° F or 212° Fahrenheit)
fall (season)
far-infrared
farside (adj.)
federal
fiber optics
fiber-optic (adj.)
field-of-view (adj.); field of view (noun)
flat-fielding
follow-up (noun and adj.); follow up (verb)
ftp
FWHM
FY 2003; FY03
Galactic (for the Milky Way only, otherwise galactic)
Galactic Center (for the Milky Way only; and similarly for Bulge, Halo etc.)
galaxy (including our galaxy, but Milky Way Galaxy and Andromeda Galaxy, not the Galaxy (jargon))
gamma ray (noun); gamma-ray (adj.)
gamma-ray astronomy
Gauss (unit)
Gaussian
GEMINI (software package)
Gemini Director
Gemini North
Gemini Observatory
Gemini Partnership
Gemini South
GMOS-North
GMOS-South
GNIRS Team
go-ahead (as a noun)
grayscale
grism
ground-based (adj.)
guide star
Gyr
Haleakalā
hard copy
hard wired (verb); hardwired (adj.)
Ha:sañ Preparatory & Leadership School
hemisphere: northern hemisphere; southern hemisphere
high energy physics
high-resolution (adj.)

home page
HTML
IAU100
i.e.,
image cutout service (Data Lab)
Indigenous (capital I)
in situ
infrared (spell out on first occurrence; can use IR for subsequent text references)
input
Instrument Support Box (ISB) – SOAR Telescope
intergalactic
internet (per CMS 17)
Iolkam Du'ag
IR
iSHELL
IYA2009
James Webb Space Telescope
*Journey Through the Universe* (Journey)
JPEG
Jupyter
Keck telescopes: Keck I; Keck II; W.M. Keck Observatory
kelvin
Kitt Peak Observers' Information web page
Kitt Peak Visitor Center (KPVC)
kpc
Kuiper Belt object
LabVIEW
large-scale (adj.)
lightcurve(s)
light-year(s)
local Universe
long-duration exposure (n.)
long-slit
long-term (adj.)
lookup (adj., as in lookup table)
low-frequency waves
low-order
lowercase
LSST Corporation
Magellan telescopes
magnetogram(s)
magnitude-limited (adj.)

Maunakea
medium-resolution (adj.)
megayear
metal-rich, metal-poor (adj.)
Michelle (Gemini mid-infrared imager)
micromirror
mid- (when followed by proper noun as in mid-June; most compound adjectives do not require hyphen as in midyear)
mid-infrared (spell out on first occurrence; can use mid-IR for subsequent text references)
Mini-200
MMT
Moon (ours only; moon for those of other planets)
Mosaic I
Mosaic-3
Mosaic camera(s)
Mosaic II imager
Mosaic *z*-band Legacy Survey (MzLS)
mosplate
mountaintop
mpc
msini
multi (in compound terms, generally do not use hyphen, e.g., multipartner; multislit; multinational, multiwavelength; but multi-object; multi-instrument; multi-messenger astronomy)
Mx
Myr
narrowband
Nasmyth
Near-Earth object (NEO)
near-infrared (also near-IR or NIR, hyphenate as adj, spell out first occurrence)
NEID Facilities Modifications
NEID Port Adaptor
NEWFIRM (use the NEWFIRM wide-field infrared imager on first reference)
nighttime
*NOAO Currents* e-newsletter
NOAO director; NOAO Director Joe Smith
NOAO North; NOAO-N
NOAO South; NOAO-S
NOAO Tucson
nod-and-shuffle mode
non (in compound terms, generally do not use hyphen, e.g., nonlinear; but, non-survey)
north (direction)
notch filter

NSF
OIR (optical/infrared, spell out first occurrence; use abbreviation on second and subsequent text references)
off-axis
OIR system
on-axis
on-site (adj.)
onboard (adj.)
online (noun, adj.)
open-access (adj.)
optical/infrared
optomechanical
overspeed
parameter
Parque Nacional Bosque Fray Jorge
pc (as an abbreviation of parsec)
PDF
Phase I Tool
Phase II submissions
PhD
Phoenix (high-resolution near-infrared spectrometer)
photo-ablation
p.m.
point spread function
polarimetric
postdoc, postdoctoral
powerhouse
pre-ship, pre-shipment
principal component analysis
principal investigator (lowercase except when preceding person's name)
protoplanet
protoplanetary
Quality Lighting Teaching Kit (QLT Kit; the kit)
radial velocity dispersion
read-time
readout (noun)
real time (noun); real-time (adj.)
RedLaSer
redshift
redshifted
resolution (hyphenate before term in compound adjectives: high-resolution, low-resolution etc.)
ridge (Kitt Peak): west ridge; north ridge

Ritchey–Chrétien
road map
roll-off roof observatory (KP)
SAC
semester
set up (verb); set-up (adj.); setup (noun)
Seyfert Type 1 / Seyfert Type 2
shared-risk basis
shut down (verb); shutdown (noun)
sidelobe(s)
sky glow
sky line
small-scale (adj.)
SMARTS Consortium
Solar System (ours; lower case for other systems)
south (direction)
southern
southern hemisphere
southern sky
space weather
space-based (adj.)
spectropolarimeter
spring (season)
staff (plural noun)
star formation (noun and adj.)
star-forming (adj.)
starburst
star trails
subaward
subfield
subpixel
substellar
summer
Sun (our Sun; lowercase for other suns)
Sun-like
supernova (SN)
supernovae (SNe)
supersonic
Survey panel/program
Swift
switchgear
T Tauri stars

Teen Astronomy Café Program
telnet
terabytes
TeraGrid
test bed
time-domain (adj.)
time-sensitive (adj.)
timescale
time series observations
tip-tilt
tonne
toward
TripleSpec (instrument)
Type Ia, Type Ia supernova
U-floor
UK (the)
ultraviolet
underrepresented
United States (noun); U.S. (adj.)
Universe
University of Hawai‘i
uppercase
URL
user guide/user manual
videoconference
Washington, DC
wavefront (adj.; noun)
waveplate
weak lensing (adj.)
weather-tight
web (CMS 17)
web page
web-based (adj.)
webcam
webcast
WebEx
website
webpage
well-known (adj.)
west (direction)
white paper
wide-field

wide-field camera
Wi-Fi
wind shake
winter (season)
Wireless LAN Controller (WLC)
WIYN Board meeting
WIYN building
WIYN Consortium
workshop
x-axis
X-ray
y-axis

# 23. Names of NOIRLab facilities

## International Gemini Observatory

The International Gemini Observatory is referred to with a capital I. It is described as the International Gemini Observatory, operated by NSF NOIRLab.

The telescopes are known as Gemini North and Gemini South (no hyphen).

## Vera C. Rubin Observatory

### Authoritative guidelines in English, Spanish.

In text, use Vera C. Rubin Observatory initially and Rubin Observatory or Rubin thereafter.
For titles/headers/captions, use Rubin Observatory.
There is always a period after the C.
Where space is limited, Rubin Observatory can be abbreviated to Rubin Obs.

Note that none of the above versions of the name is preceded by the definite article, unless of course it's used as an adjective, for example, the Rubin Observatory name usage guide.

*Do not* refer to it as (the) VRO.

When writing about a construction activity, use the Rubin Observatory Construction Project.

For the first ten years of operation, Vera C. Rubin Observatory will perform the Rubin Observatory Legacy Survey of Space and Time, using the Rubin Observatory LSST Camera and the Simonyi Survey

Telescope.

The survey should be referred to initially as the Rubin Observatory Legacy Survey of Space and Time (LSST) and thereafter as the LSST or the Survey.

The camera should be referred to initially as the Rubin Observatory LSST Camera and thereafter as the LSST Camera or LSSTCam.

The telescope should be referred to initially as the Simonyi Survey Telescope at Rubin Observatory or Rubin Observatory's Simonyi Survey Telescope and may be referred to thereafter, provided there is no ambiguity, as the Telescope.

The Auxiliary Telescope should be referred to initially as the Rubin Auxiliary Telescope (AuxTel) and as the AuxTel thereafter.

The U.S. National Science Foundation (NSF) and the U.S. Department of Energy (DOE) are joint partners in the Rubin Observatory Project and Operations.

## NSF Kitt Peak National Observatory

In text use NSF Kitt Peak National Observatory (KPNO) initially, and KPNO thereafter (expand NSF on first occurrence).

The KPNO telescopes are:
Nicholas U. Mayall 4-meter Telescope
WIYN 3.5-meter Telescope
Hiltner 2.4-meter Telescope
UArizona Bok 2.3-meter Telescope
KPNO 2.1-meter Telescope
McGraw-Hill 1.3-meter Telescope
WIYN 0.9-meter Telescope
UArizona SuperLotis Telescope
SARA Kitt Peak Telescope
Burrell Schmidt Telescope
Robotically Controlled Telescope
UArizona ARO 12-meter Telescope
Very Long Baseline Array Dish
UArizona 1.8-meter Spacewatch Telescope
UArizona 0.9-meter Spacewatch Telescope
McMath-Pierce Solar Telescope
Visitor Center 0.5-meter Telescope
Visitor Center Levine 0.4-meter Telescope

Solar And Remote Imaging Observatory (SOLARIO)
Visitor Center Roll Off Roof Observatory
Coudé Feed Telescope
DIMM All Sky Camera
NEID Solar Telescope

## US Extremely Large Telescope Program

Abbreviated US-ELTP (the US-ELTP)

## NSF Community Science and Data Center

## NSF Cerro Tololo Inter-American Observatory

In text, use NSF Cerro Tololo Inter-American Observatory (CTIO) initially, and CTIO thereafter.

The CTIO telescopes are:
Víctor M. Blanco 4-meter Telescope (NB the accent on Víctor)
SOAR Telescope
SMARTS 1.5-meter Telescope
SMARTS 1.3-meter Telescope
SMARTS 1.0-meter Telescope
SMARTS 0.9-meter Telescope
PROMPT-1 Telescope
PROMPT-2 Telescope
PROMPT-3 Telescope
PROMPT-5 Telescope
PROMPT-6 Telescope
PROMPT-7 Telescope
Thai Robotic Telescope
SARA Cerro Tololo Telescope
Curtis Schmidt Telescope
Andes Lidar Observatory
CTIO GONG
KMTNet 1.6-meter Telescope
Las Cumbres Observatory 1-meter Telescope (#4) (Stellan-A)
Las Cumbres Observatory 1-meter Telescope (#5) (Stellan-B)
Las Cumbres Observatory 1-meter Telescope (#9) (Stellan-C)

Las Cumbres Observatory 0.4-meter Telescope (#9) (Aqawan A)
Las Cumbres Observatory 0.4-meter Telescope (#12) (Aqawan B)
Wisconsin H-Alpha Mapper
Evryscope-South Telescope
MEarth-South Observatory 0.4-meter Telescope (#1)
MEarth-South Observatory 0.4-meter Telescope (#2)
MEarth-South Observatory 0.4-meter Telescope (#3)
MEarth-South Observatory 0.4-meter Telescope (#4)
MEarth-South Observatory 0.4-meter Telescope (#5)
MEarth-South Observatory 0.4-meter Telescope (#6)
MEarth-South Observatory 0.4-meter Telescope (#7)
MEarth-South Observatory 0.4-meter Telescope (#8)
T80-South Telescope
US Naval Observatory Deep South Telescope
DIMM2 Seeing Monitor
DIMM1 Seeing Monitor
SSI Airglow
CHilean Automatic Supernova sEarch
Andes Lidar Observatory
RASICAM
ASAS-SN 2
ASAS-SN 5

# 24. Boilerplates for press releases

## NOIRLab

NSF NOIRLab (U.S. National Science Foundation National Optical-Infrared Astronomy Research Laboratory), the U.S. center for ground-based optical-infrared astronomy, operates the international Gemini Observatory (a facility of NSF, NRC–Canada, ANID–Chile, MCTIC–Brazil, MINCyT–Argentina, and KASI–Republic of Korea), Kitt Peak National Observatory (KPNO), Cerro Tololo Inter-American Observatory (CTIO), the Community Science and Data Center (CSDC), and Vera C. Rubin Observatory (operated in cooperation with the Department of Energy's SLAC National Accelerator Laboratory). It is managed by the Association of Universities for Research in Astronomy (AURA) under a cooperative agreement with NSF and is headquartered in Tucson, Arizona. The astronomical community is honored to have the opportunity to conduct astronomical research on I'oligam Du'ag (Kitt Peak) in Arizona, on Maunakea in Hawai'i, and on Cerro Tololo and Cerro Pachón in Chile. We recognize and acknowledge the very significant cultural role and reverence that these sites have to the Tohono O'odham Nation, to the Native Hawaiian community, and to the local communities in Chile, respectively.

## SOAR

For SOAR results add the SOAR boilerplate:
The Southern Astrophysical Research (SOAR) Telescope is a joint project of the Ministério da Ciência, Tecnologia e Inovações do Brasil (MCTIC/LNA), NSF NOIRLab, the University of North Carolina at Chapel Hill (UNC), and Michigan State University (MSU).

## WIYN

For WIYN results add the WIYN boilerplates:

- The WIYN 3.5-meter Telescope is a partnership between Indiana University, University of Wisconsin–Madison, Pennsylvania State University, University of Missouri, Purdue University, NSF NOIRLab, and NASA.
- The WIYN 0.9-meter Telescope is founded on a partnership between the WIYN Consortium, led by the University of Wisconsin–Madison, Indiana University, and NSF NOIRLab. Its operations include an international group of universities.

## DESI

For DESI results add the DESI boilerplate:
DESI is supported by the U.S. Department of Energy's Office of High Energy Physics; the U.S. National Science Foundation, Division of Astronomical Sciences under contract to NSF NOIRLab; the Science and Technologies Facilities Council of the United Kingdom; the Gordon and Betty Moore Foundation; the Heising-Simons Foundation; the French Alternative Energies and Atomic Energy Commission (CEA); the National Council of Science and Technology of Mexico; the Ministry of Economy of Spain; and DESI member institutions. The DESI scientists are honored to be permitted to conduct astronomical research on Iolkam Du'ag (Kitt Peak), a mountain with particular significance to the Tohono O'odham Nation.

Current DESI Member Institutions include: Aix-Marseille University; Argonne National Laboratory; Barcelona-Madrid Regional Participation Group; Brookhaven National Laboratory; Boston University; Brazil Regional Participation Group; Carnegie Mellon University; CEA-IRFU, Saclay; China Participation Group; Cornell University; Durham University; École Polytechnique Fédérale de Lausanne; Eidgenössische Technische Hochschule, Zürich; Fermi National Accelerator Laboratory; Granada-Madrid-Tenerife Regional Participation Group; Harvard University; Kansas State University; Korea Astronomy and Space Science Institute; Korea Institute for Advanced Study; Lawrence Berkeley National Laboratory; Laboratoire de Physique Nucléaire et de Hautes Énergies; Max Planck Institute; Mexico Regional Participation Group; New York University; NSF NOIRLab; Ohio University; Perimeter Institute; Shanghai Jiao Tong University; Siena College; SLAC National Accelerator Laboratory; Southern Methodist University; Swinburne University; The Ohio State University; Universidad de Los Andes; University of Arizona; University of Barcelona; University of California, Berkeley; University of California, Irvine; University of California, Santa Cruz; University College London; University of Florida; University of Michigan at Ann Arbor; University of Pennsylvania; University of Pittsburgh; University of Portsmouth; University of Queensland; University of Rochester; University of Toronto; University of Utah; University of Waterloo; University of Wyoming; University of Zurich; UK Regional Participation Group; Yale University.

Founded in 1931 on the belief that the biggest scientific challenges are best addressed by teams, Lawrence Berkeley National Laboratory and its scientists have been recognized with 14 Nobel Prizes. Today, Berkeley Lab researchers develop sustainable energy and environmental solutions, create useful new materials, advance the frontiers of computing, and probe the mysteries of life, matter, and the universe. Scientists from around the world rely on the Lab's facilities for their own discovery science. Berkeley Lab is a multiprogram national laboratory, managed by the University of California for the U.S. Department of Energy's Office of Science.

NSF NOIRLab is the national center for ground-based nighttime astronomy in the United States (noirlab.edu) and is operated by the Association of Universities for Research in Astronomy (AURA) under a cooperative agreement with the National Science Foundation Division of Astronomical Sciences.

The U.S. National Science Foundation (NSF) is an independent federal agency created by Congress in 1950 to promote the progress of science. NSF supports basic research and people to create knowledge that transforms the future.

Established in 2007 by Mark Heising and Elizabeth Simons, the Heising-Simons Foundation works with its many partners to advance sustainable solutions in climate and clean energy, enable groundbreaking research in science, enhance the education of our youngest learners, and support human rights for all people.

The Gordon and Betty Moore Foundation, established in 2000, seeks to advance environmental conservation, patient care, and scientific research. The Foundation's Science Program aims to make a significant impact on the development of provocative, transformative scientific research, and increase knowledge in emerging fields.

The Science and Technology Facilities Council (STFC) of the United Kingdom coordinates research on some of the most significant challenges facing society, such as future energy needs, monitoring and understanding climate change, and global security. It offers grants and support in particle physics, astronomy, and nuclear physics.

## Dark Energy Survey (DES)

This work is supported in part by the U.S. Department of Energy Office of Science. The Dark Energy Survey is a collaboration of more than 400 scientists from 26 institutions in seven countries. Funding for the DES Projects has been provided by the U.S. Department of Energy Office of Science, U.S. National Science Foundation, Ministry of Science and Education of Spain, Science and Technology Facilities Council of the United Kingdom, Higher Education Funding Council for England, ETH Zurich for Switzerland, National Center for Supercomputing Applications at the University of Illinois at Urbana-Champaign, Kavli Institute of Cosmological Physics at the University of Chicago, Center for Cosmology and AstroParticle Physics at Ohio State University, Mitchell Institute for Fundamental Physics and Astronomy at Texas A&M University, Financiadora de Estudos e Projetos, Fundação Carlos Chagas Filho de Amparo à Pesquisa do Estado do Rio de Janeiro, Conselho Nacional de Desenvolvimento Científico e Tecnológico and Ministério da Ciência e Tecnologia, Deutsche Forschungsgemeinschaft, and the collaborating institutions in the Dark Energy Survey.

NCSA at the University of Illinois at Urbana-Champaign provides supercomputing and advanced digital resources for the nation's science enterprise. At NCSA, University of Illinois faculty, staff, students, and collaborators from around the globe use advanced digital resources to address research grand challenges for the benefit of science and society. NCSA has been advancing one-third of the Fortune 50® for more than 30 years by bringing industry, researchers, and students together to solve grand challenges at rapid speed and scale.

Fermilab is America's premier national laboratory for particle physics and accelerator research. A U.S. Department of Energy Office of Science laboratory, Fermilab is located near Chicago, Illinois, and operated under contract by the Fermi Research Alliance LLC, a joint partnership between the University of Chicago and the Universities Research Association, Inc.

The DOE Office of Science is the single largest supporter of basic research in the physical sciences in the United States and is working to address some of the most pressing challenges of our time.

### DECam

The Dark Energy Camera was designed specifically for DES. It was funded by the Department of Energy (DOE) and was built and tested at DOE's Fermilab.

### Las Cumbres Observatory

The Las Cumbres Observatory global telescope network is a non-profit science institute with the mission of advancing science and education. It has five telescopes between 0.4 and 1.0 meters deployed at CTIO.

### Bok 2.3-meter Telescope

The Bok 2.3-meter Telescope at Kitt Peak National Observatory is operated by Steward Observatory at the University of Arizona.

### Rubin

Rubin Observatory is a joint initiative of the U.S. National Science Foundation (NSF) and the Department of Energy (DOE). Its primary mission is to carry out the Legacy Survey of Space and Time, providing an unprecedented data set for scientific research supported by both agencies. Rubin is operated jointly by NSF NOIRLab and SLAC National Accelerator Laboratory (SLAC). NOIRLab is managed for NSF by the Association of Universities for Research in Astronomy (AURA) and SLAC is operated for DOE by Stanford University. France provides key support to the construction and operations of Rubin Observatory through contributions from CNRS/IN2P3. Additional contributions from a number of international organizations and teams are acknowledged.

### US-ELTP

The US Extremely Large Telescope Program (US-ELTP) will provide US-based astronomers with nationally funded all-sky observing access to two of the world's most powerful telescopes, the Giant Magellan Telescope and Thirty Meter Telescope. NSF NOIRLab will facilitate an open peer-review process of observing proposals, archive all data from both observatories, and provide an extensive suite of user support and data analysis services. Find more information about how the US-ELTP is shaping the next generation of major ground-based observatories at www.noirlab.edu/useltp.

## 25. Abbreviations

A number of standard NOIRLab abbreviations and acronyms are in use; please see the authoritative master list here: https://noirlab.edu/public/about/abbreviations-and-acronyms/

# 26. Specific rules for use in communications addressed to users of NOIRLab facilities (e.g., The Mirror)

## Images

Captions

- Provide concise captions to describe what the image represents.
- Number images if more than one in the article.

Examples:

- Figure 1. Concise description. (Credit: Program/NOIRLab/NSF/AURA/Name/Aff/Name)
- Figure 2. Concise description. (Muñoz et al. 2015, ApJ, 815, L1)

## Mathematical expressions and equations

Typesetting and spaces are deployed for clarity where needed. Unlike in the main guide, there's no rule about not including spaces.

- Use spaces around symbols and format for clarity
- z = 120
- > 400

## Units

Use of unit symbols is more common in user communications than public communications and acceptable when the meaning is clear to the average reader, e.g., Å for Ångstrom, µm for micrometer/micron, m for meter, as in 8m telescope, 5" resolution, 100 K for temperature

We adopt CMS style on the use of units:

- 4-inch nail
- 4 in nail
- 4m telescope rather than 4-m telescope
- 4m-class telescope rather than 4-m-class telescope

## Telescopes

- SOAR Telescope (not preceded by "the")

## Headings and Capitalization

Capitalize

- first words in titles and subtitles
- all nouns, pronouns, adjectives, verbs, and adverbs

Lowercase

- articles (a, an, the)
- conjunctions (and, but, or, nor)
- prepositions of four or fewer letters (out, in)

Hyphenated Words

- Always capitalize the first element.
- Capitalize the second element UNLESS it is an article, conjunction, or preposition OR the first element is a prefix.

Examples:

- A Run-in with the Boss
- Twenty-Two
- Back-and-Forth
- High-Status Job
- Time-Sensitive Material
- Anti-intellectual
- Pre-order

## Quotations

Need not be written in italics.

## Dashes

- No spaces around em-dashes

## Website Addresses

- www.us.org (no http://)
- https://www.us.org (include when https://)
- http://us.org (include http:// when no www in address)

## Author Credits and Affiliations

- For NOIRLab authors, affiliation is not needed for Mirror articles. If affiliations are included (e.g., in multi-author articles where some authors are NOIRLab and others are not), they can be listed simply as NOIRLab rather than NSF NOIRLab. If authors also wish to list their program name in their affiliation, that's fine, but it is not required.

## Text References

Examples: See Figure 2; As shown in Table 1; The orbit was variable (Figure 1).

## References

- Include arXiv link if provided if article is in publication that may not be easily accessible.

- Use footnote-like numbers in the text (e.g., [1]) to indicate numbered references in the reference list (e.g., [1] Smith, A. B. 2007, ApJ, 123, 45).
- Use ApJ style for reference lists and for inline references if ever used – https://journals.aas.org/references/

## Terms

- Coudé – lowercase unless it is part of a proper name such as Coudé Room, Coudé Telescope, Coudé Spectrograph. The word itself means “bent” and is not someone’s name, so it need not be capitalized in general use.
- Northern Hemisphere – upper case, particularly in science articles
- Southern Hemisphere – upper case, particularly in science articles
- symbols can also be used for arcminute and arcsecond when appropriate
- Version numbers use lowercase, e.g., v1.0