

# A Guide to Licensing Astronomy Outreach Products

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The aim of this article is to provide a guide to the most useful of the Creative Commons licences under which public outreach products can be licensed. It is directed towards those who wish to spread awareness about astronomy, maximise exposure of their outreach assets and avoid inappropriate uses of those assets.

## Introduction

Public outreach is a vital part of every science organisation. It not only serves to provide a stronger understanding of current research and its wider relevance to society, but helps to build support, which, at a practical level, may lead to a better justification for research and funding.

One of the simplest ways to increase awareness of an organisation is through outreach materials, or assets, whose exploitation can be efficiently increased by allowing people to use them as widely as possible. In practice, this means putting the assets into the public domain or applying liberal Creative Commons licences.

Trovatello and McCaughrean (2014) describe ESA's rationale for adopting Creative Commons and quote Creative Commons itself:

*Our vision is nothing less than realising the full potential of the Internet — universal access to research and education, full participation in culture — to drive a new era of development, growth, and productivity.*

One of the many reasons that the liberal sharing of outreach materials is more important than ever is the growing influence of the millennials (individuals born between 1980 and 2000). This particular target group, described in detail by Sandu (2014), is argued by some to have unique needs — to be creative, to be engaged, to collaborate and to be treated on equal terms — which can be fulfilled by free, unimpeded access to images and videos. Enforcing questions, registration, and online forms before allowing assets to be downloaded can put off users, thus



**Figure 1.** An image from the Japanese Selenological and Engineering Explorer mission (SELENE). This image is not released under Creative Commons and cannot be used without sending a formal application to JAXA. This image had the potential to be as widely known as the Apollo pictures if more open access had been granted. Fair use is here invoked. Credit: JAXA/NHK



**Figure 2.** Interacting galaxies NGC 474 taken with the Canada–France–Hawaii Telescope. This image is not licensed under Creative Commons and can only be used by media, textbook authors etc. after submitting an application. Fair use is here invoked. Credit: Canada–France–Hawaii Telescope/Coelum



**Figure 3.** The star-forming region S106 taken by the Subaru Telescope. This stunning image — possibly one of the very best of a star-forming region ever captured — has not received due attention due to complex licensing conditions (not Creative Commons). Fair use is here invoked. Credit: National Astronomical Observatory of Japan

restricting how widely the assets are distributed. Without such hoops to jump through, users can redirect their efforts away from copyrights and permissions and towards creativity with the assets.

These measures, however, often require considerable control over the materials to be relinquished, allowing for adaptations, and possibly commercial exploitation, of the materials. Some science organisations have difficulty accepting these compromises. In this article, we argue that this compromise ultimately leads to a net positive gain for the organisation.

Note that this is a simplified hands-on guide and it cannot replace the full legal texts found on the Creative Commons website, which we highly recommend that you consult before making any legal decisions<sup>1</sup>.

## Licensing

The field of copyright is governed by rigorously defined, and often complex, legal terms. Although copyright licences often appear straightforward on the surface, it is not always clear in their terms of use which materials can be used, where, and for what purpose.

It is, therefore, necessary to establish some of this terminology — and that used in this article — in the box on this page (Box 1). This is an introduction to terminology and it would be worthwhile to supplement this with the short primer on copyright by Lewis (2009) and the sources quoted therein.

## Creative Commons

Creative Commons (CC) is a non-profit organisation founded in 2001 to expand the range of licenses under which creative works can be made freely available for others to legally copy, share and build upon.

*The organisation has created a fully legal mark and language that stands up in court and provides the ability to share some of the rights of ownership. Such sharing language takes copyright into the computer age. Creative Commons licenses were created with the help of computer scientists, cyberlaw experts, artists, and entrepreneurs and stands up under not only*

Box 1. Terminology quick guide	
Adaptation	A new, original asset created by altering and/or building upon pre-existing assets. It is typically considered when material has been modified enough — manifesting a sufficient level of new creativity — that it qualifies to be copyrighted as its own original piece of work.
Asset	In this context, a creative piece of outreach work, typically an image, video, text or audio regarded as having value, owned by a content creator.
Attribution	A credit below the asset showing the content creator, the location/source of the material and the material's licence.
Commercial use	Use of an asset in a way that is primarily intended for commercial or monetary gain.
Content creator	The person who created the asset.
Copyright	A legal right that grants the content creator exclusive rights for its use and distribution. The copyright holder can grant the rights for its use and distribution to others through a license. All creative works are copyrighted, by international agreement, unless they fall into the public domain or their copyright is explicitly renounced.
Creative Commons	A specific type of copyright licence designed to maximise the availability of creative works by allowing others to legally build upon and share the materials. These licenses allow content creators to communicate those rights they reserve and those they waive for the benefit of others who wish to copy, adapt and distribute the material.
Licence	A legal authorisation in which the licensor allows a licensee to use the licensed material.
Licensee	In this context, a person who can use content from another because the content creator has allowed the licensee to do so.
Licensor	A person who grants a license to another.
Public domain	A content creator can waive the right to the copyright by explicitly placing the content in the public domain, where the material is not restricted by copyright and does not require a licence nor fee to use.
Remix	See adaptation.

*American jurisprudence, but international copyright courts.* Lewis (2009)

The licences provide a standardised way for content creators to grant others permission to use their assets without cost, encouraging the sharing and distribution of materials — whether original or adapted — as widely as possible.

The licenses are not an alternative to copyright. They work alongside copyright and enable content creators to modify their copyright terms to best suit their needs, and to change the default of “all rights reserved” to “some rights reserved”.

A group of astronomy communicators recently visiting Japan were so impressed

with the quality of the assets from Institute of Space and Astronautical Science (ISAS)/Japan Aerospace Exploration Agency (JAXA), National Space Development Agency of Japan (NASDA) and the National Astronomical Observatory of Japan (NAOJ), (see Figures 1 and 3), that they wrote an open letter called The Mitaka Declaration (Box 2), drawing attention to the restrictive conditions under which the assets are distributed. This letter should not be seen as a criticism of the Japanese context as it could equally be addressed to many other organisations around the world who do not use CC (see for instance Figure 2), but it serves as an example of the pros and cons of CC licensing.

## The licences

For work in astronomy outreach, there are six main CC licenses typically in use. Each ensures that content creators retain credit for, and copyright over, their work, but allows and restricts different uses of the original material.

Under all six licenses, material must be appropriately attributed. However, with the proliferation of electronic media including apps, games, and YouTube videos, it is not always clear how to do so correctly. As a rule of thumb, the attribution must be visible to the end user, it should neither be hidden nor detached from the material and must include a link to the licence and indicate if changes were made. Figure 4 serves to illustrate the most common decision tree for choosing a CC licence for outreach assets.

The six licenses are explained below in order, from the most to least liberal use of the original material.

### 1. Attribution (CC BY 4.0)

Under the Attribution licence, material can be displayed, distributed, published, and adapted freely, both commercially and non-commercially, as long as the content creator is explicitly credited for the original work. This is the most accommodat-

ing and liberal licence available, and is recommended for maximum exposure of the asset<sup>2</sup>.

#### Used by

This licence has been adopted by astronomy organisations, including the European Southern Observatory (ESO)<sup>3</sup>, the International Year of Astronomy 2009, and Universe Awareness who, as taxpayer-funded organisations, have decided to relinquish the authority to decide how taxpayers utilise their materials.

#### Comments

Assets under this licence can be used for commercial purposes, including advertisements, but cannot be used to imply endorsement by an organisation or employee for commercial products or services.

### 2. Attribution–ShareAlike licence (CC BY-SA 4.0)

The ShareAlike licence enables others to build on and adapt the original material,

## Box 2. The Mitaka Declaration

*The space science and astronomy outreach community represented by undersigned at the International Symposium on the NAOJ Museum, discussed how to improve the recognition of the outstanding Japanese space science and astronomy.*

*This gathering at NAOJ is concerned with how best to increase public awareness and appreciation of important science results in Japan and internationally. This is an important topic especially given the nature of national expenditure for science, which is essentially a matter of public ownership and providence, and cultural heritage.*

*Following the UNESCO's Open Educational Resources Paris Declaration which encourages the open licensing of educational materials produced with public funds: "Governments/competent authorities can create substantial benefits for their citizens by ensuring that educational materials developed with public funds be made available under open licenses (with any restrictions they*

*deem necessary) in order to maximize the impact of the investment."*

*Recognising the success of providing universal open access to education and public outreach resources by organisations and projects like NASA, ESO, the International Year of Astronomy 2009, Universe Awareness and others.*

*Recognising the excellence and importance of Japan in producing world class scientific results in space and astronomy from organisations such as ISAS/JAXA, NASDA and NAOJ.*

*Recognising the need of the scientists to preserve a proprietary period of the data for e.g. 12 months to conduct their research.*

*Recognising that Japan have produced some of the most important scientific images and videos of humankind resulting from these data.*

*Recognising that currently these Japanese public resources cannot be used as widely as they deserve, for instance on Wikipedia*

*and also not by journalists, textbook authors and others without a lengthy and time-consuming process.*

*Recognising the great potential for international public recognition of the frontline Japanese space science and astronomy projects and results.*

*Recognising that broadening the access to educational and public outreach products, such as images and videos, from the science being conducted and facilitated by organisations like ISAS/JAXA and NAOJ, will have a positive feedback on the recognition of the organisation and of Japan.*

*Urging that universal access to the results of science in the form of images and videos from ISAS/JAXA, NASDA and NAOJ should be given, after the scientific proprietary period, for the purpose of open public sharing under a simple Creative Commons licensing.*

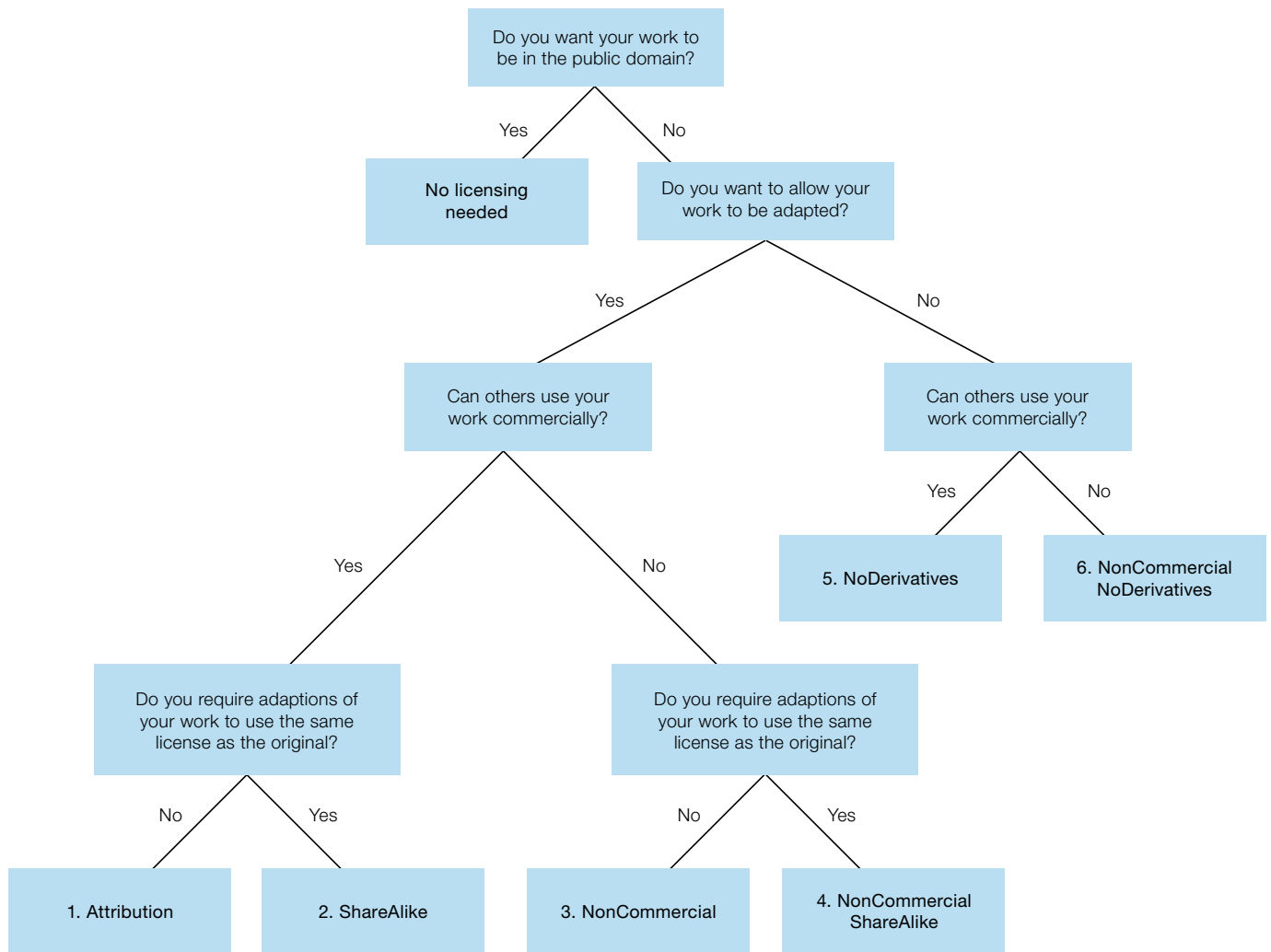


Figure 4. Decision tree for choosing a Creative Commons license for outreach assets.

even for commercial purposes, but requires adaptations of the original material to also be released under the ShareAlike licence<sup>4</sup>.

**Used by**

Wikipedia’s textual content and most of the accompanying visual media (such as photos and illustrations) is licensed under ShareAlike or a more liberal licence. This licence, or a more liberal one, is therefore required for any materials that are to be uploaded to a website.

This licence also forms the basis of the slightly modified CC licence used by the European Space Agency (ESA). As an intergovernmental organisation, ESA uses an Attribution–ShareAlike 3.0 Intergovernmental Organisation licence<sup>5</sup> that allows for special mediation and arbi-

tration processes if the licence is violated (Trovatello & McCaughrean, 2014).

**Comments**

Some commercial entities, such as TV broadcasters, cannot release their materials under a ShareAlike licence and cannot, therefore, include footage licensed with the ShareAlike licence. This limitation should be taken into consideration if you would like your material to be freely available to such commercial entities.

**3. Attribution–NonCommercial (CC BY-NC 4.0)**

Under the NonCommercial licence, others can distribute the original material and adaptations of the material, but for non-commercial purposes only<sup>6</sup>.

**Used by**

The NonCommercial licence is used by those who would like to retain the commercial rights to their work, but allow for all other uses and adaptations. This maximises the distribution of the materials and the content creator’s exposure, which, in turn, can increase monetary opportunities for the original artist — something that cannot occur as easily for material locked up under a more restrictive copyright.

**Comments**

What constitutes commercial use is broadly defined, but in practise the term can be applied to any income-generating activities, both direct and indirect. In our interpretation, this includes charging for tickets in a planetarium, regardless of whether this is mainly intended for educational, non-profit use, and will never create a net profit.

#### 4. Attribution–NonCommercial–ShareAlike (BY-NC-SA 4.0)

NonCommercial–ShareAlike enables others to change and build upon the licensed work non-commercially, as long as the content creator is credited and the new work is licensed under the same terms as the original<sup>7</sup>.

##### Used by

This licence is used by those who are happy for others to adapt and utilise their original material, as long as any adaptations are licensed identically to the original material and the content creator retains the right to be the only person to profit from the original material.

#### 5. Attribution–NoDerivatives (CC BY-ND 4.0)

The NoDerivatives licence only allows the distribution of unadapted copies of the original material. This means that the material must be passed along unchanged and in whole with credit to the content creator<sup>8</sup>.

##### Used by

This licence is adopted by those organisations who are interested in distributing a complete work, for instance a documentary or a planetarium full-dome production, but who want to prevent others from editing and using snippets of the material. This could be for artistic reasons or because parts of the material come from third parties and are only licensed for use in the original product.

##### Comments

The product cannot be sub-licensed, meaning that a distributor can distribute the show with credit to the content creator and a clear indication of the licence, but not sub-license it to others.

#### 6. Attribution NonCommercial–NoDerivatives (BY-NC-ND 4.0)

The most restrictive of the CC licenses, NonCommercial–NoDerivatives only enables others to download and share the licensed work. It does not allow for others to adapt the work or to use it commercially<sup>9</sup>.

##### Used by

NonCommercial–NoDerivatives should be used by those content creators who want to prevent others from changing their original material, creating adaptations of it, and using the original work for their commercial gain. This ensures that no matter how many times the original work is copied or shared, the content of the copies will be the same as the original and used only for non-commercial purposes.

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##### Notes

- <sup>1</sup> More information on Creative Commons: <http://creativecommons.org/>
- <sup>2</sup> More information on the Attribution licence: <http://creativecommons.org/licenses/by/4.0/>
- <sup>3</sup> Further information regarding ESO's image use policy can be found on the ESO website: <http://www.eso.org/public/copyright/>
- <sup>4</sup> More information on the Attribution–ShareAlike licence: <http://creativecommons.org/licenses/by-sa/4.0/>
- <sup>5</sup> More information on the Attribution–ShareAlike 3.0 Intergovernmental Organisation licence: <http://creativecommons.org/licenses/by-sa/3.0/igo/>
- <sup>6</sup> More information on the Attribution–NonCommercial licence: <http://creativecommons.org/licenses/by-nc/4.0/>
- <sup>7</sup> More on the Attribution–NonCommercial–ShareAlike licence: <http://creativecommons.org/licenses/by-nc-sa/4.0/>
- <sup>8</sup> More on the Attribution–NoDerivatives licence: <http://creativecommons.org/licenses/by-nd/4.0/>
- <sup>9</sup> More on the Attribution–NonCommercial–NoDerivatives licence: <http://creativecommons.org/licenses/by-nc-nd/4.0/>

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##### Biographies

**Rebecca Davies** is a freelance science writer from the UK. She has a first-class honours BA in Journalism, Media and Cultural Studies from Cardiff University and a passion for astronomy and spaceflight. Previously a community radio presenter and a media ambassador for the National Youth Agency (NYA), Rebecca has recently worked as a science communication intern at ESO's education and Public Outreach Department (ePOD).

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