

ChimPANzee - a new panorama and allsky rendering Software

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ChimPANzee has been developed by a group of planetarians from daily experiences with planetarium projection systems. A lot of innovative algorithms have been implemented to simplify rendering allskies for any projector configuration.

An advanced graphical user interface allows the user to compose allskies from different images, to virtually walk through the dome and to preview every step of the process instantly. New ways to create perfectly matching softedge masks have been investigated. Intelligent mask routing allows mask rendering directly from image alpha channels.

Meanwhile ChimPANzee is commercially available in English and German. It turned out to be the leading software in Germany for this purpose. A new release of this software package will be available in summer 2004.

While many planetarians concentrate on video show productions this software is a valuable tool for all slide users.

For further information refer to www.chimpanzee.de.

Although the world is going digital and many planetarians consider buying video systems, there is still a huge number of planetarians who either do want to proceed with slide projection systems or just do not have the money to switch to video systems.

For those who are going to use slide projection systems in the future for whatever reason, it is helpful to know which resources are available. Many commercial companies do not care for slides anymore.

This is the origin of ChimPANzee. ChimPANzee has been developed by young planetarians from Fulda, Germany, based on experiences from many years of work with our panorama system. We have used the most modern techniques and have invented a lot of new and useful algorithms to simplify allsky and panorama rendering.

Together with all common functions as known from other software on the market, we implemented a lot of new functions that were not available before:

To our very best knowledge no perfect algorithms for rendering allsky softedges had been available before. Black bars, dark zenith spots or bright "stars" can be observed in many planetaria. Our new algorithms solve all these problems. All softedges are rendered exactly without any mathematical simplification. To simplify mask creation and editing, support for alpha channels has been added. Hard edge masks can be rendered from alpha channels and routed directly to separated output images to receive additional hardedge masks to cut off any grey background. Alternatively grey background can be avoided by creating "quick and dirty" threshold masks. Rendered masks can also be stored in alpha channels for easy editing afterwards. As an alternative to commonly used allsky masking ChimPANzee supports "keyhole masks" – the zenith is part of only one slide.

Slides that are projected into the dome at an angle vary in brightness due to different projection distances within one slide. This brightness difference can be corrected.

Special alignment marks at slide edges allow aligned slide mounting. Usually non aligned slide mounting is crucial.

It is possible to create Panoramas from cloned single images to receive results quickly.

After composing an allsky from different originals one can either render slides directly or save the entire dome content as one image e.g. to hand over to colleagues.

Being asked by colleagues we decided to make our software available to other planetaria. Subsequently we investigated a graphical user interface that provides the user with previews of every step of the process to make it easier for other planetarians to handle this wide range of possibilities. This includes previews on projector positioning, slide masking and alignment grids as well as previews on the rendering results. The user can take a virtual tour through the dome.

All images are controllable in brightness, contrast, transparency etc.

Projectors can be positioned anywhere in the dome. Fisheye lenses are supported. There is a printing function for projector layouts. The printed layout can be handed over to graphic artists to

illustrate new allskies with respect to the projector configuration.

For distortions that result from a bad aligned film recorder ChimPANzee has a function to correct these.

Every step of the rendering process is recorded to log-files to enable the user to check up the entire process later on.

We decided to split the rendering functions into a beginner and an advanced mode to make it easier to get started with the software.

A function for batch processing is included to handle larger amounts of dome originals.

To run the software one can use any commercially available modern computer. All major file formats are supported (PSD, BMP, PCX, TGA, TIFF, PNG). The software package is available in English and in German. Of course an extensive manual is included.

We will make the third version of ChimPANzee available to the community this summer. Further information are available at www.chimpanzee.de or enquiries can be sent to info@chimpanzee.de.

For all those who need help with projector alignments on site, we offer to travel to your planetarium and give you advices on site. However, our email hotline is available to every registered user for free.