



September 2020

Dear Keck Observatory Supporter,

Without question, 2020 remains a most unusual and challenging year for all of us. The pandemic has turned lives and work upside down, and we at the W. M. Keck Observatory are no exception. Each day brings new challenges, and flexibility is now our watch word. Thanks to the dedication and innovation of our staff, and the support of our donors and friends such as you, we continue to successfully navigate this year's challenges to be On Sky each night, generating new science results for our community of astronomers and for the world.

If you follow Keck Observatory on Facebook or Twitter, you've noticed a great many news releases and announcements of our discoveries over the past several months. Many of these findings were made possible by Keck researchers using astronomical data gathered months or even years ago, data that still holds yet-to-be-found surprises for those astronomers, graduate students, and postdocs willing to reanalyze and parse out this trove of data. The Keck Observatory Archive (KOA) is a publicly available, open-source repository of all the data gathered from every observatory instrument and every night's observations at Keck.

Yet for its ready availability, this data is not always easy for astronomers to use. While this has been a very successful mode of operation through the many years of Keck's science productivity, we are seizing an opportunity made available by the recent advent of new programming environments, machine learning, and data science techniques. Keck Observatory is embarking on a new program that will make each night's science data much more quickly available, useful, and usable to the world's community of astronomers. In doing so, we intend to shift from being "On Sky Every Night" to our new goal: "On Sky Every Night with the Best Data."

Called the Data Services Initiative (DSI), this three-year program will build and deploy a modern software infrastructure for data acquisition, processing, and curation for the Keck Observatory science community. When completed, DSI will not only make for faster, more effective science results from the community of Keck astronomers, but will open Keck Observatory to any researcher anywhere in the world who may want to sleuth our rich repository of science data for new discoveries. DSI will also make it easier for Keck Observatory to partner with observatories around the world in joint research. Even citizen-scientists will be able to use Keck Observatory data for discovery, as was recently illustrated in an exciting news announcement about research on cool brown dwarf stars near Earth, research based on data gathered using the NIRES instrument at Keck:  
<https://www.keckobservatory.org/cool-brown-dwarfs/>

I hope you will consider making a mid-year gift to the Director's Fund at W. M. Keck Observatory, in support of the Data Services Initiative and the many other programs enabled by our growing family of supporters. Your gift - no matter the size - is what energizes each night of science at Keck. Your support makes you a full partner in our discoveries.

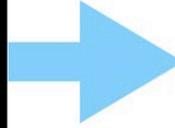
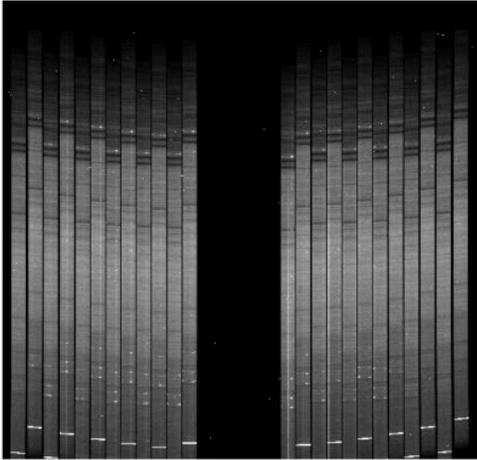
To make your gift, please go to <https://keckobservatory.org/donate/> where you can quickly and easily make your donation online.

With gratitude for your support,

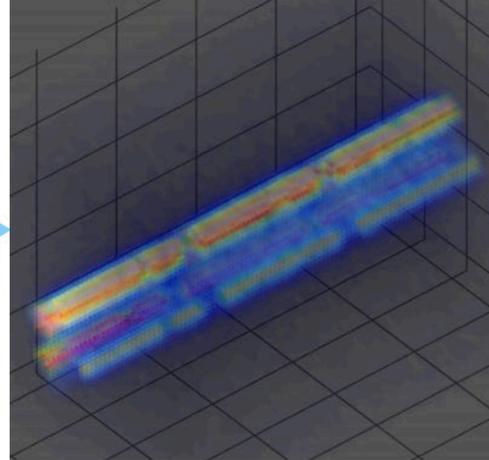
Hilton Lewis  
Observatory Director

**The Data Services Initiative at work with  
one of Keck's newest instruments, KCWI.**

From This



To This



On the left, a raw data frame as it is written to disk by the KCWI instrument.  
On the right, a segment of the pipeline reduced KCWI data cube.

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