

## Re: Why .avi format ?

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*Source:* <http://sci.tech--archive.net/Archive/sci.astro.amateur/2005-11/msg01784.html>

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- *From:* Chris L Peterson <[clp@xxxxxxxxxxxxxxxxxxxxx](mailto:clp@xxxxxxxxxxxxxxxxxxxxx)>
  - *Date:* Mon, 28 Nov 2005 06:09:02 GMT
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On Sun, 27 Nov 2005 20:58:48 -0500, Tom Rauschenbach  
<[tomsusenet@xxxxxxxxxxxxxxxxx](mailto:tomsusenet@xxxxxxxxxxxxxxxxx)> wrote:

>That makes a great deal of sense to me. Especially in light of statements  
>that seem to imply that long exposures aren't really needed for CCD data  
>collection. Although I have to wonder why there aren't discussions  
>about readout noise/image. What are the costs and benefits of many short  
>exposure images over fewer long exposure images ? Of course tracking  
>issues are an obvious one.

There are many discussions about noise issues, just not a lot on this  
forum. Readout noise is the primary noise source when you are doing any  
kind of video astronomy, either with a webcam or a video camera and  
frame grabber. It is primarily readout noise that determines your S/N.  
Because of the short exposures, dark current noise is insignificant.

There is only one fundamental benefit of short exposures– the ability to  
capture images during brief moments of atmospheric stability. A  
collection of many images can be graded for quality and the bad ones  
discarded. This is functionally equivalent to high order adaptive  
optics. Readout noise makes for a stiff noise penalty, but with hundreds  
or thousands of images the noise is substantially reduced. But the  
technique is only useful for very bright objects– the Sun, Moon, and a  
few planets.

Once you start imaging DSOs, you need long exposures– many minutes is  
usually required to maximize S/N.

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Chris L Peterson  
Cloudbait Observatory  
<http://www.cloudbait.com>

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- *Follow-Ups:*
  - ◆ [\*Re: Why .avi format ?\*](#)

Re: Why .avi format ?

◇ *From:* atasselli@xxxxxxxxxxxx

• **References:**

- ◆ **Why .avi format ?**  
◇ *From:* Tom Rauschenbach
- ◆ **Re: Why .avi format ?**  
◇ *From:* Davoud
- ◆ **Re: Why .avi format ?**  
◇ *From:* Tom Rauschenbach

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