From: Frank Masci <fmasci@ipac.caltech.edu>✐
Subject: Re: AWOD redelivery
Date: May 21, 2013 2:32:31 PM PDT
To: Roc Cutri <roc@ipac.caltech.edu>, Tim Conrow <tim@ipac.caltech.edu>, Davy Kirkpatrick <davy@ipac.caltech.edu>, jwf@ipac.caltech.edu

4 Attachments, 3.3 MB

Attached are four plots that used the new WPHotpm (v6 test version: WPHotpm_tst) in runs involving the old and new AWOD module:

(1) w1mpro difference between runs using the old and new AWOD
(2) w2mpro difference between runs using the old and new AWOD
(3) w1m difference between runs using the old and new AWOD
(4) w2m difference between runs using the old and new AWOD

The vertical red lines are approximate 5-sigma limits. I'm somewhat surprised at the size of the scatter in the w?mpro differences given _no_ frame randomization occurred. Maybe this is expected, even when the depth-of-coverage changes slightly.

Regards, Frank

On May 20, 2013, at 9:30 AM, Frank Masci wrote:

> The problem reported below (regarding pock marks in the w2 coverage maps) was indeed related to an earlier parameter update specific to AllWISE (not operative in earlier processing phases). This parameter adds a regularizing constant to the input frames to ensure positivity when performing some computations in I*2 (to minimize memory usage). For large values of this parameter, the dynamic range is sacrificed and the internal pixel stack variance can be forced to be tiny and even zero in places. This can lead to an excess of "false outliers" depending on the background level.
>
> The AWOD module was updated to make things more robust. It has been unit tested on tiles 1174p075 and 2657m288. A new version is in svn and built into dev/bin. There are no parameter updates related to this.
>
> Regards, Frank
>
> On May 16, 2013, at 4:28 PM, Frank Masci wrote:
>> I know which parameter was updated that caused this. This was part of a delivery made on March 16 (email attached). I need to explore why.
>>
>> It appears the ac51 runs were run around April 10/11, so yes it's in there. I checked and there are pock marks (w2 only).
>>
>> Regards, Frank
>>> On Thu, 16 May 2013, Frank Masci wrote:
>>>
>>>> I see something disturbing with the w2 depth-of-coverage maps. There are

depressions of ~3 pixels deep (white dots in the attached - a greyscale inverted map). I sense this is related to an outlier-rejection parameter change specific to AllWISE. The frame masks show that most of the pixels in the stack on one of these points are outlier flagged. I will investigate.
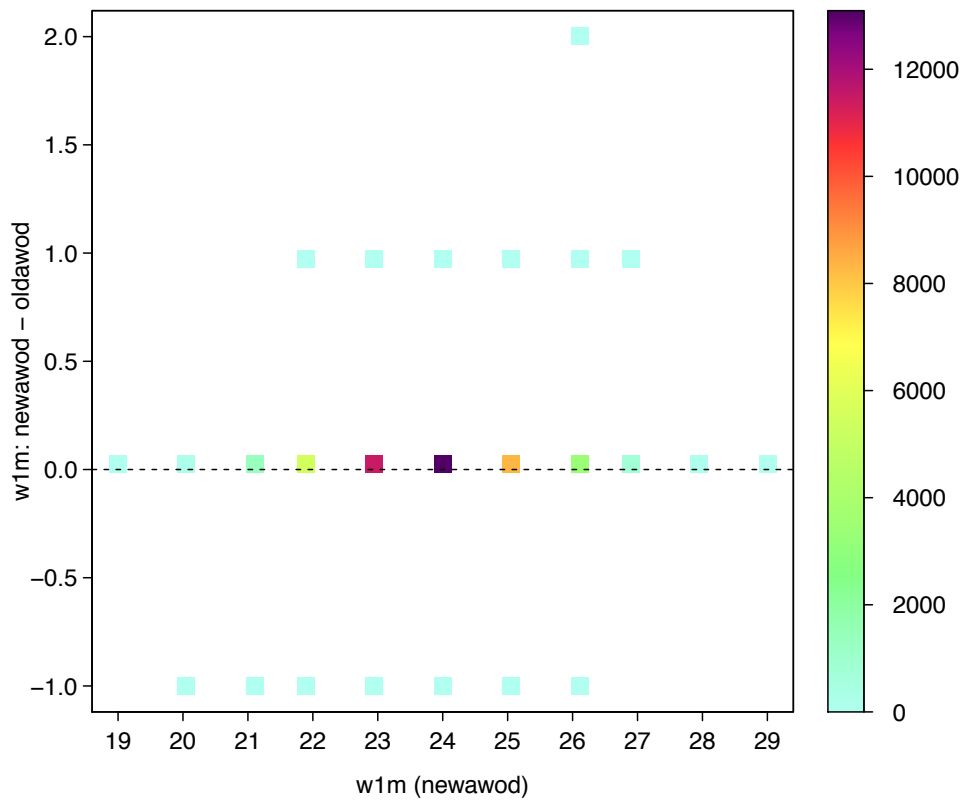
Regards, Frank

Tile 1174p075 (w1mpro: new vs old AWOD)
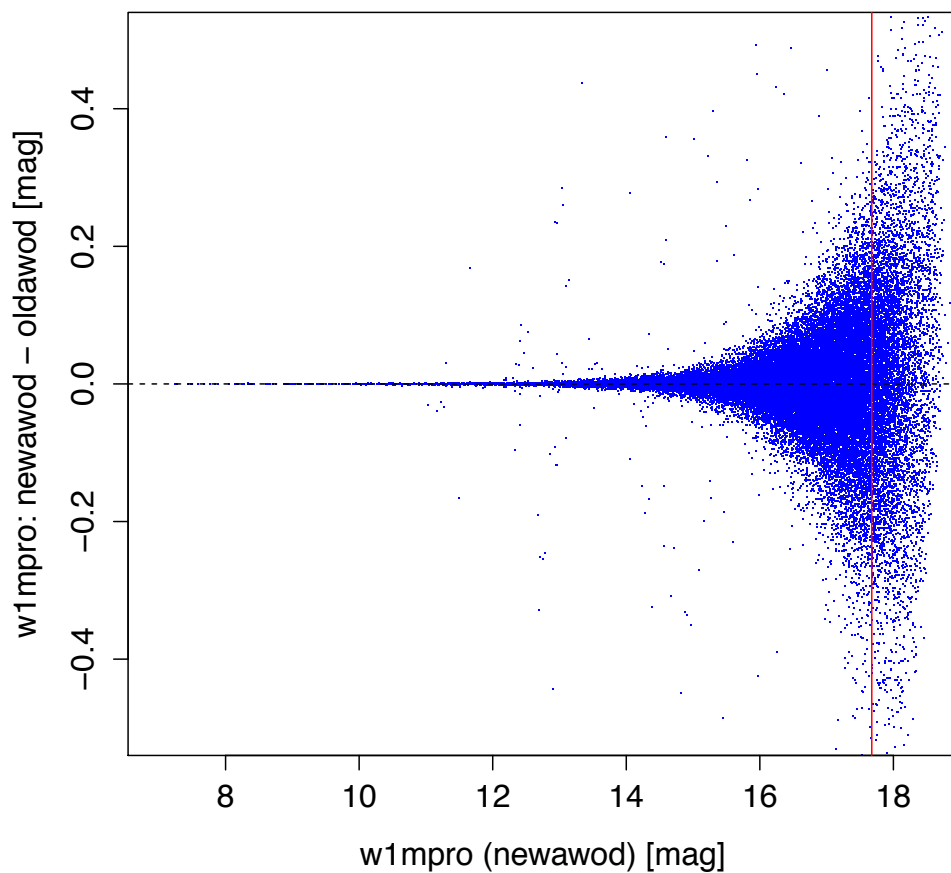
Tile 1174p075 (w2mpro: new vs old AWOD)
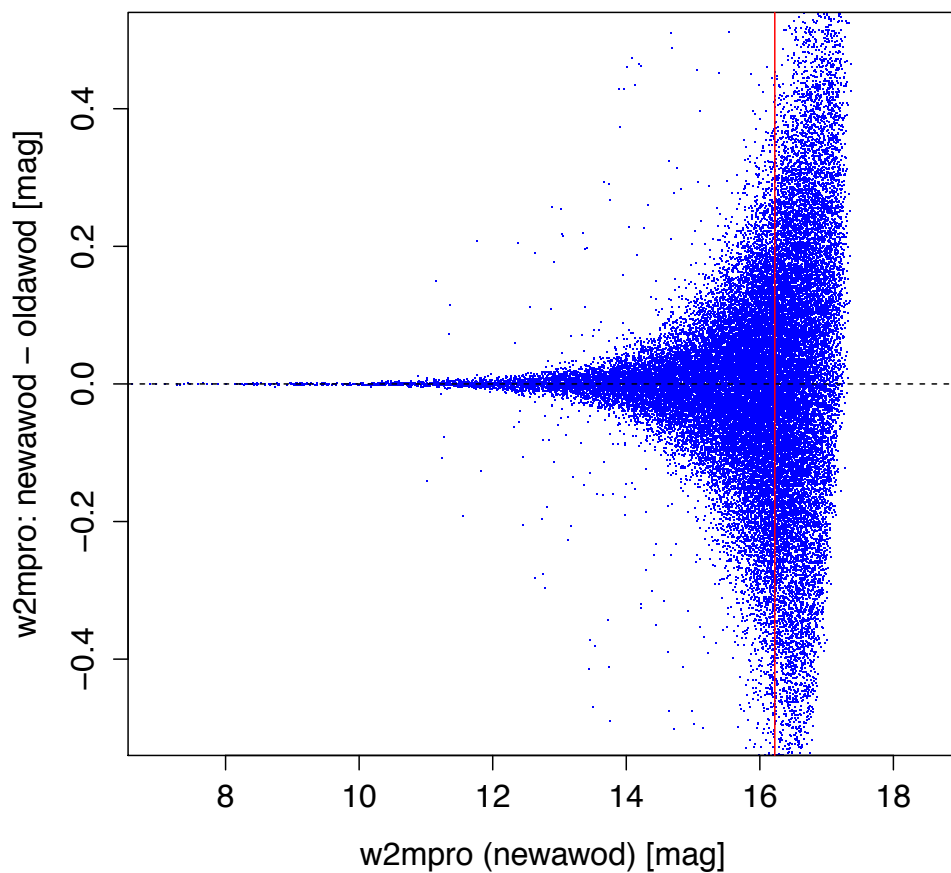
Tile 1174p075 (w1m: new vs old AWOD)

Tile 1174p075 (w2m: new vs old AWOD)