Subject: Re: Strange return from where function Posted by byrne.david on Wed, 16 Sep 2009 05:19:31 GMT View Forum Message <> Reply to Message

On Sep 16, 3:14 pm, David <br/>
<br/>
byrne.da...@gmail.com> wrote: > Hey guys not sure what is going on here. > I have an array with particle IDs to track particles. I want to search > for the particles in the array by thier particle ID. > Simple where call but its being strange. This is what i get > > IDL> print, index > 1.00000 > > IDL> wh\_track\_full=where(tracks[0,\*] eq index) IDL> print, wh\_track\_full > IDL> wh\_track\_full=where(tracks[0,\*] eq 1.0000) > IDL> print, wh\_track\_full 0 1 > > So you see it finds all the elements with an ID of 1.000 if i type in > the actual value. But when i assign it to a variable I just pick up the first element and not the second. I've never come across this before, any ideas? > > Regards > David Actually i found the problem. It was that index was Float = array[1] I had to use wh\_track\_full=where(tracks[0,\*] eq index[0]) for it to work.

Subject: Re: Strange return from where function Posted by Wout De Nolf on Wed, 16 Sep 2009 10:59:53 GMT View Forum Message <> Reply to Message

On Tue, 15 Sep 2009 22:19:31 -0700 (PDT), David <a href="mailto:byrne.david@gmail.com">byrne.david@gmail.com</a>> wrote:

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David

```
>>
>> I have an array with particle IDs to track particles. I want to search
>> for the particles in the array by thier particle ID.
>>
>> Simple where call but its being strange. This is what i get
>>
>> IDL> print,index
>> "i½" ½" ½½" 1.00000
>> IDL> wh track full=where(tracks[0,*] eq index)
>> IDL> print, wh track full
>> "¿½" ½"; ½"; ½"; ½"; ½"; ½"; ½"; ½")
>> IDL> wh track full=where(tracks[0,*] eq 1.0000)
>> IDL> print, wh_track_full
>> "¿⅓" ½⅓" ½⅓" ½⅓" ½⅓" ½⅓" ½⅓" ½⅓" ½⅓" ≥%
1 1⁄2/3
>>
>> So you see it finds all the elements with an ID of 1.000 if i type in
>> the actual value. But when i assign it to a variable I just pick up
>> the first element and not the second.
>>
>> I've never come across this before,
>> any ideas?
>>
>> Regards
>> David
> Actually i found the problem. It was that index was Float = array[1] I
> had to use wh track full=where(tracks[0,*] eq index[0]) for it to
> work.
> -David
Also remember sky-is-falling issues: a real or rational number is only
```

stored exactly (in floating point representation) when it can be written as f=x.2^v

All other numbers are rounded to the closest x.2^y so everything between  $x.2^y$  and  $(x+1).2^y$  is stored as one of these two numbers.

```
So for example:
IDL> x=8388608
IDL> y=-23
IDL> print,x*2.^y,format='(F100.50)'
IDL > print,(x+1)*2.^{y},format='(F100.50)'
IDL> print, 1. eq 1.0000001
 1
```