Subject: Re: DOUBLE precision no precise??
Posted by James Tappin on Tue, 05 Mar 2002 12:14:50 GMT
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David Williams wrote:

>
> I've always had heaps of help from the inhabitants of this newsgroup --
> for which I am eternally grateful -- despite my often stupid questions.
> So, when a mate of mine came across this `quirk' yesterday, and I wasn't
> sure how to help him out, I thought I'd ask this group.
>
> He has an array of numbers that he wants to apply a user-defined
> function to, but we're both a little disturbed by the fact that if you
> do the calculations with a pocket calculator, you get different numbers
> than if you perform the same calculation in IDL.
>
> To try and find where the problem is, we tried the following lines...
>
> IDL> a = DOUBLE(42766.080001)
> IDL> print,a,FORMAT='(F24.17)'
>
> 42766.07812500000000000
>
> As you see, the number we get out isn't the same as the number we
> entered. I'm guessing it's to do with the way IDL stores numbers in
> memory, but my understanding of low-level computational processes isn't
> great.
>
> Can anybody help me understand what's going on, and/or if there's a way
> around? I'd really appreciate whatever help is on offer, so thanks in
> advance.

The problem is that 42766.080001 is a single precision constant, so what's happening is that you are storing the single-precision approximation to 42766.080001 in some scratch location, then converting that to double.

What you actually want is:
a=42766.080001D0

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