Subject: Re: bizarre number transformation
Posted by Don J Lindler on Thu, 25 Jul 2002 12:25:22 GMT
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>
> The problem is that the number 443496.984 is being turned into the
> number 443496.969 from basic assignments using Float() or Double(),
> despite the fact that even floats should easily be able to handle a

> or seven decimal places of significance").
>

When you count the seven decimal places of significance, you must count the
all of the digits, not just the ones to the right of the decimal point.
443496 and 9 are the seven digits of significance.

> Since I knew that I had successfully read in numbers much greater than
> 443496.984 in the past, I created temp.dat with just the number
> 443496.984 in it, and read this into a variable, x3. If x3 is cast as
> a float, it doesn't work, i.e. the number is 443496.969. But, if x3
> is cast as a double, then it contains the correct value. Why isn't a
> float sufficient (443496.984 << 10^38 and contains only 3 decimal
> places)? And, why doesn't x2=Double(443496.984) produce the correct
> result?
>
When you execute x2=Double(443496.984), IDL recongnizes 443496.984 as a
single precision floating point constant. It is placed into a single
precision temporary variable prior to conversion to double. The precision
is
already lost before the conversion. What you want is a double precision
constant:

x2 = 443496.984D0

Don