Subject: Re: IDL's BESELJ returns NAN for small argument and large order
Posted by Phillip Bitzer on Tue, 18 Mar 2014 23:47:28 GMT
View Forum Message <> Reply to Message

"That's not a bug, it's a feature" :-)

The reason you get a NaN can be found in the help:

ITER
Set this keyword equal to a named variable that will contain the number of iterations performed. If the routine converged, the stored value will be equal to the order N. If X or N are arrays, ITER will contain a scalar representing the maximum number of iterations.
Note: If the routine did not converge for an element of X, the corresponding element of the Result array will be set to the IEEE floating-point value NaN, and ITER will contain the largest order that would have converged for that X value.

So,
IDL> print,beselj(0.1d,103.d, ITER=n)
IDL> print, n ;get n=102

So, the algorithm properly converges for order 102, but not 103+. This is why get a number for your second example.