Subject: Re: no backwards compatibility in IDL 5.6
Posted by Craig Markwardt on Fri, 28 Feb 2003 07:42:13 GMT
View Forum Message <> Reply to Message

notspecified@dev.null (Matt Feinstein) writes:
> I think this explains it adequately. In older versions, ATAN with a
> complex argument returned a useful number --but the number it
> returned didn't happen to be the arctangent of a complex argument!
> Perhaps people should take a close look at Abramowitz and Stegun,
> equation 4.4.39.

Matt, let me say that I totally agree. The original behavior of ATAN was the correct implementation of the incorrect algorithm.

> FWIW, if you write a program that uses incorrect, undocumented
> behavior, you are asking for trouble. RSI can be blamed for not
> providing a fast ARG or PHASE function, but this is a venial sin, at
> worst. IMHO.

Here is where I completely disagree. RSI covered up their original "oops" with another even bigger oops. There is no excuse to break an existing, working, interface in minor-release software. I realize that having ATAN do the correct "Abramowitz & Stegun" thing is more elegant, but I still argue that compatibility and maintainability always trumps elegance, at least in minor releases. RSI had their chance at elegance the first time around.

The original behavior of ATAN with complex numbers was available from IDL 3.6 through IDL 5.4. That's over seven releases, and nearly a decade of stability!

Now let's get to the documentation question. The "old" behavior of ATAN *WAS* in fact documented in the _Using IDL_ manual. A quick check of the Signal Processing chapter, under the section "Magnitude and Phase" shows this example:

```
V = FFT(U)
...
; Phase of first half of v:
phi = ATAN(V(0:N/2))
```

There it is right there! [It's also indexed under "phase, signal spectra".] Five years ago when I was a novice on FFTs and IDL, I went through these examples, and picked up on the techniques described there. After all, I was learning from the experts.

Now you may ask, in what versions of the manual did this example

appear? As near as I can tell, it showed up in IDL 5.0, and kept appearing up through 5.4. And STILL appeared in IDL 5.5. And *STILL* appears today in IDL 5.6!!!

This posting is not really about ATAN. It's really about how RSI appears to be making unilateral decisions about the IDL language which breaks the compatibility of peoples' code. They should stop that.

Craig

--

Craig B. Markwardt, Ph.D. EMAIL: craigmnet@cow.physics.wisc.edu
Astrophysics, IDL, Finance, Derivatives | Remove "net" for better response
---