



USCID

*The U.S. society for
irrigation and drainage
professionals*

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*The United States Committee on
Irrigation and Drainage is a National
Committee of the
International Commission on
Irrigation and Drainage*

March 20, 2006

Dr. Ron Beck
U.S. Geological Survey
517 USGS National Center
Reston, VA 20192

Dear Dr. Beck:

Remote sensing is a critically important technology for improving our management of water resources in the United States and abroad over the coming quarter century. Facing unprecedented stress on those resources, irrigated agriculture is being asked to grow more food and fibre with less water, freeing resources for expanding urban and environmental uses. Essential to the application of this technology to irrigation water management is the availability of high resolution imagery in the visible, near infrared, and thermal infrared bands. Such imagery is currently available from the Landsat series of satellites.

Unfortunately the continued availability of such imagery is threatened by reduced functionality of Landsats 5 and 7. Of even greater concern is the prospect that the new generation Landsat satellites may eliminate the thermal imager from its design. This would fatally compromise the utility of these satellites in estimating evapotranspiration (ET) from crops and native vegetation using the SEBAL and METRIC energy balance algorithms. These are the most commonly used and most effective programs for this purpose and rely on the existence of contemporaneous information from all three of these bands to operate.

Although thermal infrared imagery is available from other satellites such as MODIS, the 1 kilometer resolution of these images is too coarse for use in isolating ET from individual fields. Needed is imagery with the following characteristics.

- Contemporaneous images from visible, near IR and thermal IR bands
- Resolution of 60 meters or less for the thermal imager
- A repeat coverage interval of 7 to 10 days

The Landsat satellites fulfill this need admirably and the prospect of losing this capability, because of the lack of a thermal imager on future satellites is deeply disturbing.

USCID is a professional organization comprised of irrigation district managers, state and federal water managers, academics, and consultants working with irrigation management in the American West. We are affiliated with the International Commission on Irrigation and Drainage which links together 60 odd countries with similar organizations and interests. As such we are aware of the need to produce more with less water, both here and abroad, and the promise of remote sensing technology to help us do that. I hope that you will give careful consideration to the needs of water users across the spectrum for this vital technology in considering the capabilities of the Landsat Data Continuity Mission and urge you to support the inclusion of the high resolution short-wave and thermal capability outlined above in future missions.

Sincerely yours,

Larry D. Stephens
Executive Vice President