

CRL lidar sites for MDS lidar validation

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Tropical and subtropical lidar sites for the MDS lidar validation are required since the inclination of the MDS lidar satellite is about 30 degrees. Continuous observations with the ground base lidars are needed to compensate the ones of the space lidar. There are several lidar sites supported by CRL (Communications Research Laboratory) in the world shown in Table 1 and Fig. 1. Objective of lidars at the sites is to monitor the stratospheric aerosols. Three lidar sites of the Table 1, which are Bangkok, Bundung and Tirupati, are suitable candidates of sites for the MDS lidar validation. Block diagram of the lidar at Bangkok, Thailand is shown in Fig. 2. The lidar is shown in Fig. 3. The lidar has one transmitter and two receivers as shown in Fig. 2. One of the receivers with photo-counter is for the observation of the stratospheric aerosols and another with an analog-digital converter for the observation of the tropospheric aerosols and cirrus clouds. The lidar at Bundung is described in detail in the presentation A18 by O.Uchino. The lidar was installed in Mar.,1998 at Tirupati, India and has capabilities to measure the stratospheric aerosol (Mie lidar mode) and temperature (Rayleigh lidar mode). Some improvement will be needed to use the lidar at Tirupati for the MDS lidar validation.

Validation of the satellite observation have to be collaborative experiments well organized with the lidar network and the in-situ observation of the aerosols and cirrus clouds have to be well organized to make really good experiment of the validation.

Table 1. Lidar sites related to CRL

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Table 1.1 Lidar stations related to CRL

Site	Location	Collaborative Institution
Arctic Region		
Eureka	80° N, 86° W (Canada)	MRI, STEL of Nagoya univ.
In Japan		
Wakkanai	45° N, 142° E	TIT, NIES
Other countries		
Lanzhou	36° N, 104° E (China)	Lanzhou Desert Inst.
Bangkok	13° N, 100° E (Thailand)	KMITL
Bandung	7° N, 108° E (Indonesia)	MRI, STEL of Nagoya univ., LAPAN
Bangalore	(India)	ISRO, NMRF
Tirupati	~13° N 79° E	

For MDS
 Lidar
 Validator

MRI: Meteorological Research Institute, Ministry of Transport
 TIT: Tohoku Institute of Technology
 NIES: National Institute of Environment Studies, Environment Agency
 KMITL: King Mongkut's Institute of Technology Ladkrabang
 STEL of Nagoya univ; Solar Terrestrial and Environment Laboratory of Nagoya Univ.
 LAPAN: The Indonesian National Institute of Aeronautic and Space
 ISRO: Indian Space Research Organization

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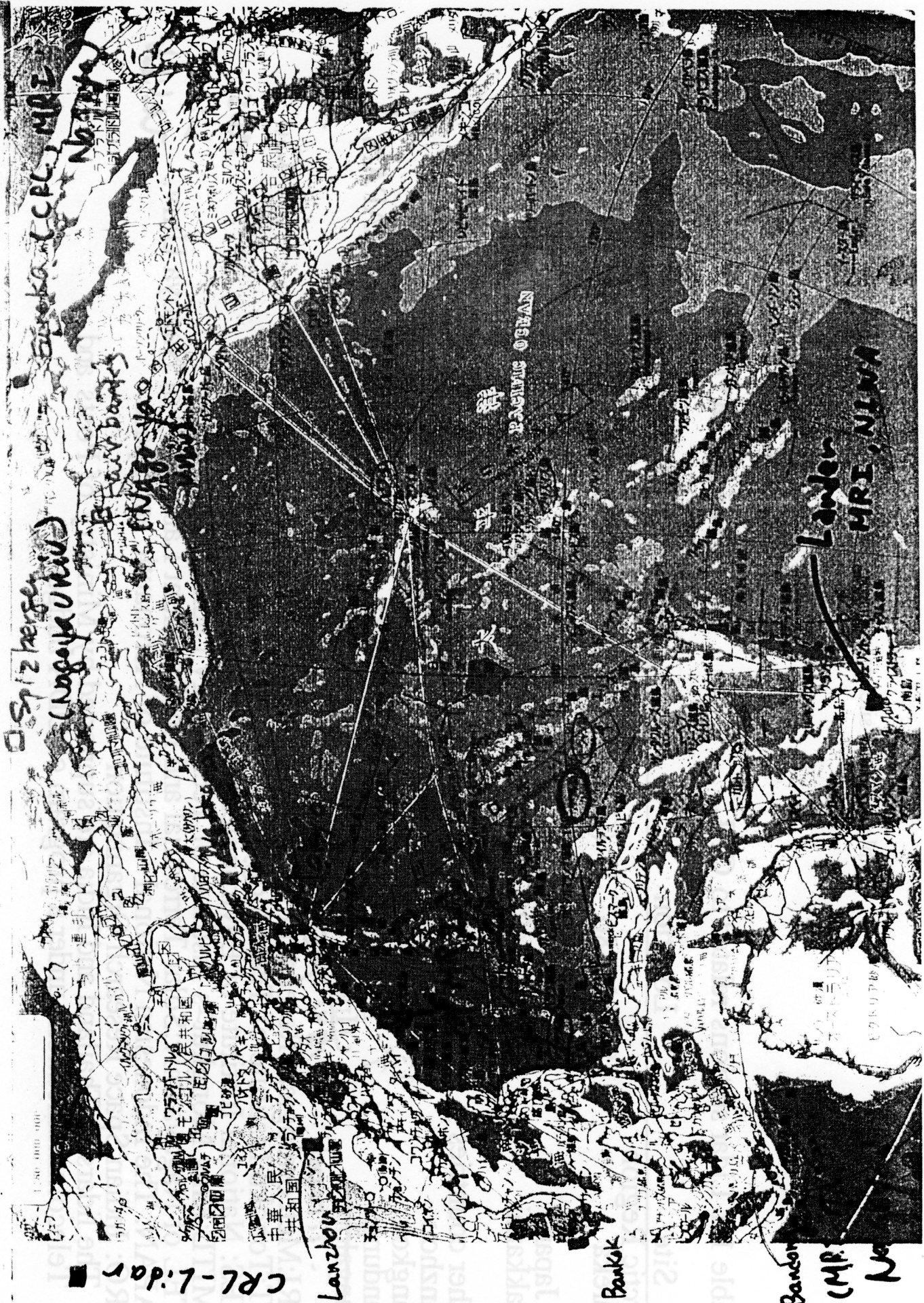


Fig. 1. Map of lidar site related to CRL.

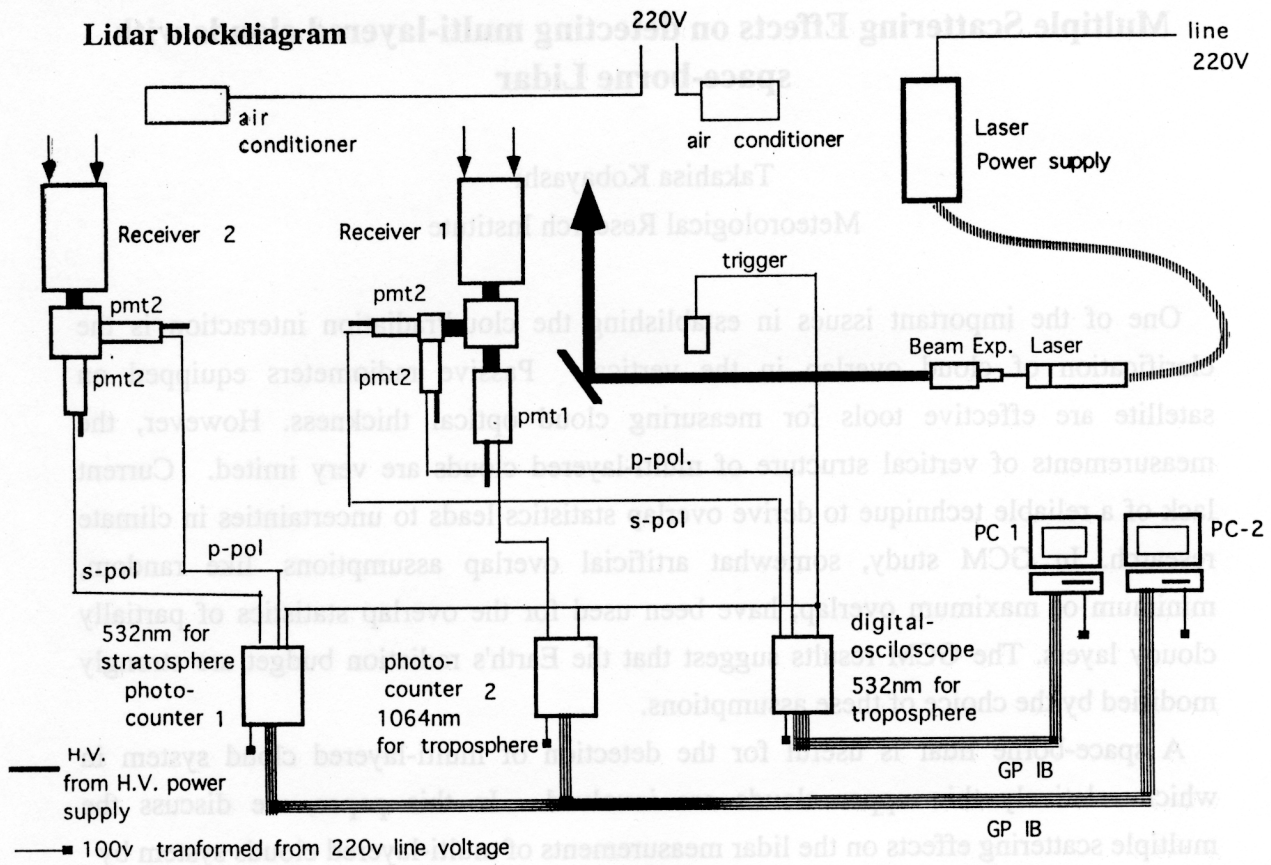


Fig. 2. Blockdiagram of the lidar at Bangkok.



Lidar and Wind Profiler in Thailand

Fig. 3. Photo of the lidar site at Bangkok.