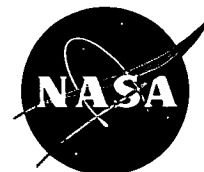


August 1972

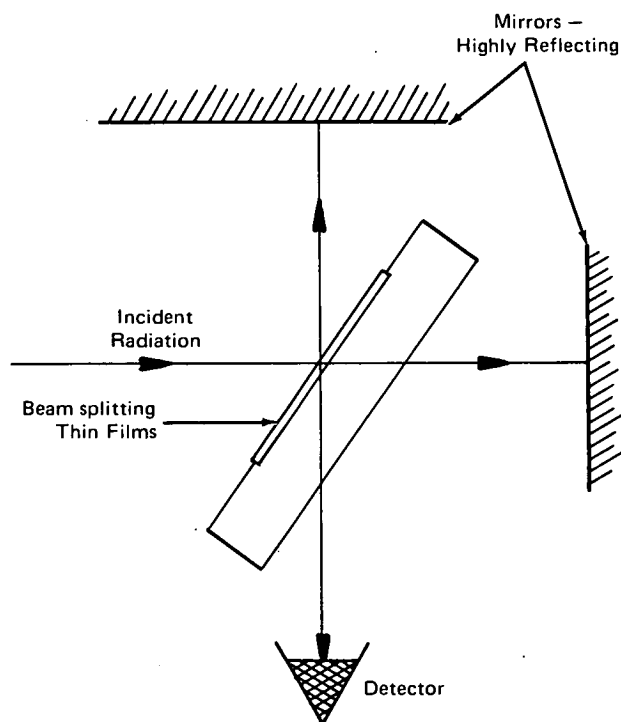
# NASA TECH BRIEF

## Goddard Space Flight Center



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### Unsupported Thin Film Beam Splitter



#### How it's done:

The use of a thin pellicle of Parylene N (which has a low reflective index) as an active component in the beam splitter design eliminates the need for light path compensating devices. The beam splitter system, as part of an interferometer, is composed of a set of beam splitting films attached to a suitable frame. The lack of a path length compensating element is the result of the extreme thinness of the beam splitting film structure. This requires the Parylene N film to have a specific optical thickness in order to optimize spectral performance.

#### Note:

Requests for further information may be directed to:  
 Technology Utilization Officer  
 Goddard Space Flight Center  
 Code 207.1  
 Greenbelt, Maryland 20771  
 Reference: TSP72-10471

#### Patent status:

No patent action is contemplated by NASA.

#### The problem:

Light path compensating devices in infrared spectral instruments are costly and require background filtering.

#### The solution:

A multilayer beam splitter film system yielding nearly equal broadband infrared reflectance and transmittance in the 5 to 50 micron spectral region has been developed which will significantly reduce system size and cost.

Source: Roy C. Bastien and R. J. Scheuerman of  
 Perkin Elmer Corp.  
 under contract to  
 Goddard Space Flight Center  
 (GSC-10525)

Category 02