3M Technologies for Solar

Powering Productivity for 30+ Years

1977 — **3M™ Nextel™ Velvet Coating 101** used to enhance solar radiation absorption on solar collectors

1979 — **3M™ Reflective Films** used to construct parabolic mirrors for solar energy collectors

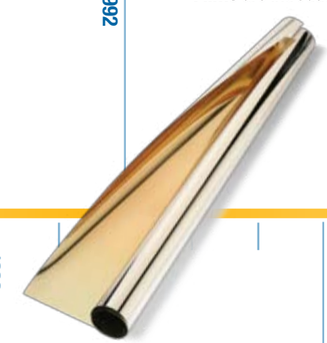
1980 — 3M introduces **3M™ VHB™ Tape** technology, used to replace mechanical fasteners in many industrial assembly applications.

1983 — **3M™ Optical Lighting Film** incorporates microscopic prisms in a continuous thin film

1985 — **3M™ Solar Energy Collection Films** introduced as a cost-effective, high weatherability alternative to glass mirrors

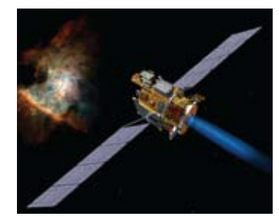
1989 — 3M patents a solar energy concentrator that includes a thin, flexible Fresnel lens

1992 — **3M™ Multilayer Mirror Films** are introduced



1995 — Testing of **3M™ Mirror Films** in CSP installations is begun

1998 — NASA's Deep Space 1 probe launched. Probe featured an advanced refractive concentrator array incorporating a new 3M Line-Focus Fresnel lens material.



NASA/courtesy of nasaimages.org

2001 — Trials begin on "Stretched Lens Array" technology for spacecraft applications, using a new, ultra-light 3M lens film that drastically reduces thickness and mass while maintaining high optical efficiency

Photo courtesy of Entech Solar, Inc.

2006 — **3M™ Scotchshield™ Film 17** is introduced, offering improved protection of PV solar panels from weathering, UV radiation

2009 — **3M™ Solar Acrylic Foam Tapes** help speed assembly, reduce cost and improve durability of solar panel constructions

1975 1980 1985 1990 2000 2005 2010

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