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SPRING, 1983



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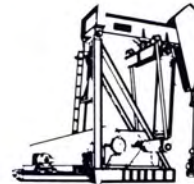
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The **LUFKIN** Line

Spring 1983 • Volume 59 • Number 1



CONVENTIONAL

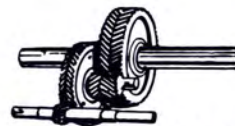


AIR BALANCED



MARK II

OIL FIELD PUMPING UNITS



GEARS FOR INDUSTRY
AND SHIP PROPULSION

CENTRAL DIVISION

A Starry, Starry Night Janice Aston	4
A New Concept in Production	8
LUFKIN Installations	10
LUFKIN Snapshots	12

COVERS

Front:

The spherical halo of Neutrinos around
the Milky Way galaxy
Photo courtesy of National Aeronautics
and Space Administration

Inside Front:

Spring wildflowers of Texas
Photo by LUFKIN photographer, David Freeze

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Starry, Starry Night

On a mountaintop in Texas,
astronomers are probing
the secrets of the universe

By Janice Aston

When darkness falls, the space around us comes into view. A starry night can be dazzling, but far beyond its shimmering lights, made visible only by powerful instruments, is a strange and wonderful universe.

Each night at The University of Texas' McDonald Observatory, scientists with giant telescopes scan the vast West Texas skies that canopy the Davis Mountains. Hidden in the heavens above is a universe of other galaxies.

These galaxies are the frontier of astronomy, the oldest of the sciences. For centuries, man has studied the stars, attempting to understand the phenomena of the universe. In recent years, with the technological advances accompanying the space age, this science has entered a period of explosive progress.

From atop Mt. Locke, isolated from civilization, dedicated astronomers and students explore the unknown blackness from four optical telescopes that serve as "eyes" on the solar system. McDonald Observatory is one of the world's major research centers for astronomy, and scientists from all around the globe vie for telescope time there.

The observatory's 107-inch reflecting telescope ranks among the top 15 largest and best telescopes in the world. Its oldest telescope, an 82-inch reflector, was dedicated in 1939 and remains one of the world's most important telescopes. Though small by McDonald standards, two other reflector models, 30- and 36-inch telescopes, are larger than the biggest telescopes at most observatories.

The 107-inch telescope was one of

(Photo courtesy of The University of Texas)

the first major telescopes in the world to be computer-controlled, and with the aid of computers, astronomers at McDonald Observatory are able to carry on some of the most ambitious studies of the universe in astronomical history. The main computer contains the locations of thousands of celestial objects to aid the astronomer in finding and tracking the object to be studied.

Since the mammoth telescope was partially financed by the National Aeronautics Space Administration (NASA), many of its projects involve planetary and lunar studies that will shape the scope of future space missions. All four telescopes at McDonald are used for research on distant stars and galaxies as well as for long-term solar system studies of planets, comets and asteroids.

Besides supporting space exploration, the planetary program also gathers data that is of general astronomical interest. One of the most important uses of these studies is the long-term understanding of the earth's atmosphere. By observing the atmospheres of alien worlds, the complexities of meteorology and climatology become clearer.

Lunar laser ranging is another research program carried out at McDonald. Three times daily, laser beams pass out through the 107-inch telescope, hit a reflector placed on the moon by the Apollo astronauts,



(Opposite page), On clear nights, activity in the domes begins at dusk. Two-thirds of the nights on Mt. Locke are cloudless, perfect for stargazing. (Top), A view of the Rosetta Nebula in Monoceros constellation (Photo courtesy of the National Aeronautics and Space Administration) (Below), The observatory is located in the heart of the Davis Mountains in West Texas.

(Photo courtesy of The University of Texas)



(Below), Continued modernization of the 82-inch reflector telescope and its auxiliary instruments maintains its active role in modern astronomical research. (Top), The light-gathering power of the 107-inch telescope is a quarter of a million times greater than that of the unaided human eye.

and bounce back. The measure of their flight time provides the continuously changing quarter-million-mile distance between the Earth and the moon.

With a view to the future, The University of Texas is planning the construction of a 300-inch telescope at the observatory that will be the largest in the world. Because of its enormous size, it will be able to gather light from galaxies at the edge of the universe, more than fifteen billion light-years away. And because the universe is not much older than that, the light it gathers will be left over from the beginnings of time.

Although McDonald Observatory has been described as an astronomer's utopia, none of the scientists live on the mountain. The observatory is operated only as a field station, and astronomers come there for observing runs that last from a few days to as long as two weeks. A resident staff of about 50 people maintains the observatory. About half of this group lives with their families in the nearby Fort Davis area, but some 20 families reside at Mount Locke.

Forty miles from the nearest doctor, supermarket or movie theater, these inhabitants have learned the meaning of the word "self-sufficiency." They shop for essentials only once or twice a month, maintain their own fire trucks, ambulance and schoolbus, and operate a community library.



Photos by David Freeze, LUFKIN photographer

But the darkness that accompanies isolation is exactly why astronomers come to Mt. Locke. The black night of the Davis Mountains is not disturbed by bothersome headlights of traffic or the unwelcome glow of nearby cities. Two-thirds of the mountain's nights are clear, perfect for stargazing, and its far-southern location enables astronomers to observe, over the southern curve of the round earth, stars which are completely hidden from observatories farther north.

To maintain the dark sanctity of the mountain and to shield the telescopes from light that can interrupt and ruin months of study, inhabitants of the mountain have adopted some strange habits. They wind around the curvy mountain road with their car lights off. Porch lights are strictly prohibited. Houses on the mountain are provided with lined curtains so that no interior lights can penetrate outside.

Astronomy is a science for nightowls, and activity in the domes begins at dusk as astronomers

prepare their instruments for a night's work. As darkness sets in, the dome openings are rolled back, and the telescopes are pointed at a faraway star or galaxy. There is so much to be learned, and the world has so few great telescopes that the telescopes at McDonald are scheduled and used every night, 365 days a year.

During daylight hours, while astronomers sleep, the mountain is opened to visitors. Nearly 100,000 persons roam the mountaintop each year. On the last Wednesday of every month, the 107-inch telescope is opened to visitors for public viewing. The extremely popular event often requires reservations six months in advance.

Very few visitors leave Mt. Locke unimpressed. It is impossible not to feel that the observatory is a place where the mysteries of the universe are being unraveled, and the mountain offers some of the most beautiful views in Texas. The stark peaks silhouetted against the sky would make the trip up the highway mountain a worthwhile adventure even if the observatory were not there.

Rancher W.J. McDonald of Paris, Texas, was well-acquainted with the wonders of a starry night in Texas when he left the bulk of his million dollar estate to The University of Texas in 1927. His instructions were to erect and equip an astronomical observatory for the study of astronomy. His passion for stargazing and his generous bequest led to the birth of one of the world's major centers for research in astronomy. On a mountaintop in Texas, astronomers are finding, shaping and fitting together pieces of the great puzzle that is our universe.

Two radio telescopes on the mountains gather "light" that cannot be seen by the human eye.



A NEW CONCEPT IN PRODUCTION

Steel fabrication and final assembly and shipping plant utilizes the latest in modern technology.

A major achievement of Lufkin Industries during 1982 was the construction of a new steel fabrication and final assembly and shipping plant. The \$7 million facility introduces a new concept in oilfield pumping unit fabrication, utilizing the latest in modern technology.

Located on a 400-acre site southeast of the city of Lufkin, the 41-acre plant consists of a seven bay structural shop covering 122,500 square feet, and a 76,500 square-foot final assembly and shipping building. All structures for LUFKIN's three pumping unit product lines—conventional, Mark II and air-balanced—are fabricated

and shipped from the new facility.

The plant features the most advanced equipment on the market, automating many production procedures to increase product quality and manufacturing efficiency. Material handling and flow has been improved in the two buildings by the addition of specially-designed transport systems.

Two 15-ton, 110-foot magnetic-equipped cranes that can be rotated for positioning receive, then distribute raw materials to production areas. Conveyors move materials and parts to work stations, eliminating the need for fork lifts and rail cars.

Computer-numerically controlled machinery punches holes that were previously drilled into pumping unit beams. The same machinery gauges beam lengths for sawing, and then cuts the parts automatically to programmed requirements.

A plasma-arc shape burning machine and a torch-cutting machine automatically cut pumping unit parts, while roll-over fixtures hold parts in position for welding. An angle-cutting machine, also computer numerically-controlled, cuts to size and punches holes into parts with angles.

In the shipping area, three 15-ton semi-gantry cranes move parts as they are readied for shipment. Eight





(Left), The structural plant features two computer numerically-controlled Kaltenbach saws that automatically cut beams to programmed requirements. (Right), Parts are moved through the final assembly and shipping building by cranes. Eight docks facilitate loading of units.

loading docks were built at floor level, effecting more efficient loading and securing products for shipment.

The new plant has been in full operation for eight months and the

whole process of fabricating and shipping pumping units has become more efficient while product quality has improved. This has resulted in more timely deliveries.

The new steel fabrication and

final assembly shipping plant is another step in LUFKIN's continuing effort to expand and modernize its manufacturing facilities.



LUFKIN
Installations

CENTRAL DIVISION



LUFKIN M-640D-365-144, Arcadia Refining Company, Tyler, Texas



LUFKIN M-912D-305-192, Shell Oil Company, J.J. Blalock, Well No. 4, Quitman, Texas



LUFKIN A-640D-305-168, Amoco Production Company, North Cowden Unit, Well No. 876, Odessa, Texas



LUFKIN C-320D-256-100, Wayne Harper, William Howell 'B' Lease, Well No. 5, Gainesville, Texas



LUFKIN C-57D-76-54, Cities Service Company, Bander Lease, Well No. 10, White Oak, Texas



LUFKIN A-160D-74-20, Atlantic Richfield Company, D. Ledbetter Lease, Well No. 1, Price, Texas



LUFKIN M-160D-213-86, MacMillan Petroleum, Inc., Tract 16, Well No. 3, Calion, Arkansas

LUFKIN

Snapshots



CENTRAL DIVISION



JO CONNELL
Union Oil Co. of California
Midland, Texas



FRANK FORSYTH
Hanley Petroleum Inc.
Midland, Texas



VIC VASICEK
V-F Petroleum Inc.
Midland, Texas



L.S. HENDERSON
Marathon Oil Co.
Midland, Texas



D.R. MEEK
Tipperary Corp.
Midland, Texas



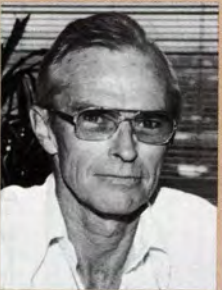
KNOX DAVIS
Union Texas Petroleum
Midland, Texas



J.C. PRINCE
Gulf Oil Exploration and
Production Co.
Hobbs, New Mexico



GAIL CHENOWETH
Marathon Oil Co.
Midland, Texas



FRED BOZE
Tamarack Petroleum
Midland, Texas



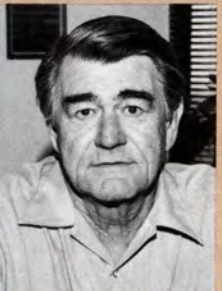
DALE SORESEN
Moran Exploration Inc.
Midland, Texas



ROBERT JACKSON
Wagner & Brown
Midland, Texas



VIRGINIA BLACK
D.L. Dorland Oil Producer
Midland, Texas



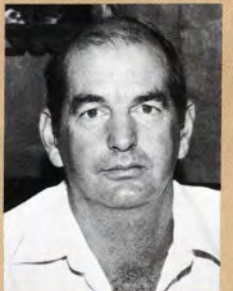
HANK FITZHUGH
Tamarack Petroleum
Midland, Texas



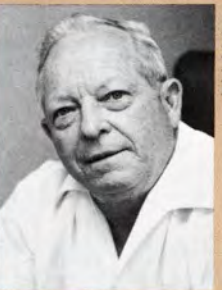
JAMES MORING
Parker & Parsley
Petroleum Co.
Midland, Texas



KENNETH BRISTOW
Wagner & Brown
Midland, Texas



D. "DEE" JORDAN
Ike Lovelady, Inc.
Midland, Texas



D.E. MORRIS
Xpert Energy Corp.
Midland, Texas



JIM FURRY
HNG Oil Co.
Midland, Texas



JACK BYRD
Lacy & Byrd, Inc.
Midland, Texas



PAUL SIMS
Ike Lovelady, Inc.
Midland, Texas



HAROLD LUCCHI
Cities Service Co.
Midland, Texas



J.W. KIMBROW
HNG Oil Co.
Midland, Texas



O.L. CHENOWETH, JR.
O.L. Chenoweth
Midland, Texas



ELLSWORTH R.G. BOSWELL
American Quasar
Petroleum Co.
Midland, Texas



COTTON McBEE
Exxon Company, U.S.A.
Andrews, Texas



HOLLIS BAIRRINGTON
Hudson Resources Corp.
Dallas, Texas



TOM COOK
The Desana Corp.
Midland, Texas



A.T. FRY
Henry Petroleum Corp.
Midland, Texas



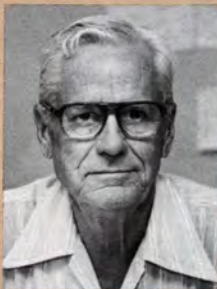
R.E. BUCKNER
Amoco Production Co.
Andrews, Texas



RUBY ROGERS
Cordova Resources, Inc.
Dallas, Texas



CLAUD SPAIN
Adobe Oil & Gas Corp.
Midland, Texas



HAROLD MEREDITH
Henry Petroleum Corp.
Midland, Texas



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Union Oil Co. of California
Andrews, Texas



RONNIE MADISON
Cordova Resources, Inc.
Dallas, Texas



ROY GOULD
American Trading and
Production Corp.
Midland, Texas



GARY SMITH
Cotton Petroleum Corp.
Midland, Texas



MIKE BOND
Superior Oil
Midland, Texas



B.D. LAYNE
Hrubetz Oil Co.
Dallas, Texas



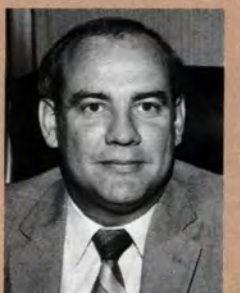
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Maralo Inc.
Midland, Texas



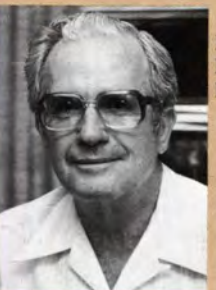
PETE WILKINSON
BTA Oil Producers
Midland, Texas



S.H. LINDLEY, JR.
Petroleum Corp. of Texas
Breckenridge, Texas



SPENCE SHETTLE
Jackson Exploration, Inc.
Dallas, Texas



MALCOLM ABEL
M.D. Abel Co.
Midland, Texas



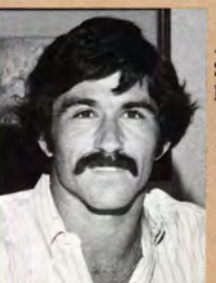
JOHN ROAM
Arco Oil and Gas Co.
Andrews, Texas



FRANK OSBORNE
Petroleum Corp. of Texas
Breckenridge, Texas



AL FELDERHOFF
Felderhoff Production Co.
Gainesville, Texas



A.B. BURON, JR.
Sabine Production Co.
Midland, Texas



C.E. McDONALD
Exxon Company, U.S.A.
Andrews, Texas



FRED DUESER
Petroleum Corp. of Texas
Breckenridge, Texas



VINC FELDERHOFF
Felderhoff Production Co.
Gainesville, Texas



W.T. KALER
Kaler Oil, Ltd.
Gainesville, Texas



HAROLD NEFF
Harold Neff & Co.
Tyler, Texas



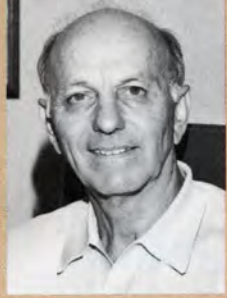
W.H. BYRD
Berg, Laney & Brown
Oil Producers
Smackover, Arkansas



JACK PHILLIPS
Jack Phillips Oil Producer
Gladewater, Texas



JOHN WALTER
Walter Exploration, Inc.
Dallas, Texas



DAVID CASKEY
Goldsberry Operating Co.
Shreveport, Louisiana



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Smackover, Arkansas



R.F. MORLOCK
Venus Oil Co.
White Oak, Texas



VICKI MARKS
Walter Exploration, Inc.
Dallas, Texas



HOOD GOLDSBERRY
Goldsberry Operating Co.
Shreveport, Louisiana



JAMES NOBLES, JR.
MacFarlane Company
El Dorado, Arkansas



J.M. EUBANKS
Sun Exploration and
Production Co.
Longview, Texas



LEE JACOBS
Lear Petroleum Corp.
Dallas, Texas



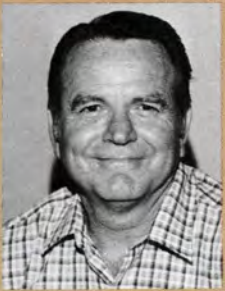
GEORGE PAXSON
Crystal Oil Co.
Shreveport, Louisiana



CHARLES TUDOR
Russell Operating Co.
Magnolia, Arkansas



STANLEY BLOSSOM
Sun Production Co.
Longview, Texas



NAT GOODWIN
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Tyler, Texas



LYMAN ENDSLEY
MacMillian Petroleum
(Arkansas) Inc.
El Dorado, Arkansas



RALPH WEISER
Weiser-Brown Oil Co.
Magnolia, Arkansas



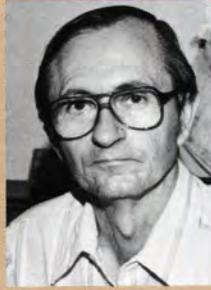
O. PAUL BRADHAM
Sun Exploration and
Production Co.
Longview, Texas



RANDY SPRADLEY
Fair Energy Oil Production
and Exploration
Tyler, Texas



JOHN LOWERY, JR.
Lowery Oil Co.
El Dorado, Arkansas



LOYD CARDELL
Cardell-Tlapek Co.
Magnolia, Arkansas



ANDREW HUNGER
Champlin Petroleum Co.
Longview, Texas



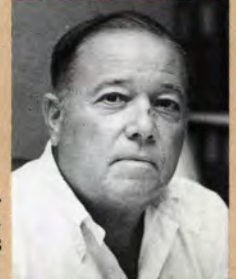
JOHN HILLS
Clemco Petroleum
Engineering & Management
Tyler, Texas



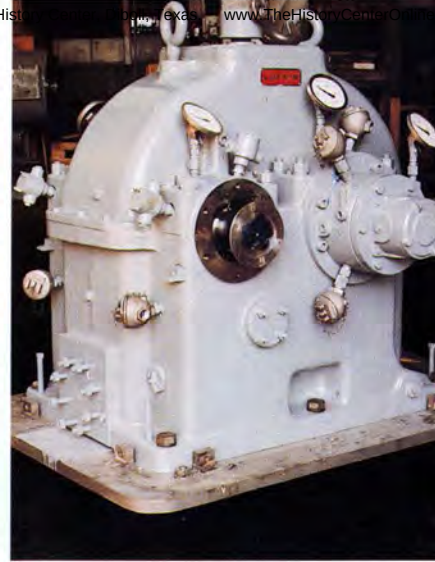
JOHN LOWERY, SR.
Lowery Oil Co.
El Dorado, Arkansas



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Mobil Producing Texas and
New Mexico Inc.
Kilgore, Texas



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INDUSTRIES, INC.
LUFKIN, TEXAS



Service for your 50-year-old LUFKIN pumping unit is no joking matter.

Quite often, customers half-jokingly ask our parts departments if it's possible to order a wrist pin or some other part for a 50-year-old LUFKIN pumping unit.

Our warehouses maintain an inventory of commonly needed parts.

These customers are frequently surprised to find such parts in stock. In fact, most of the 165,000 units we've manufactured since 1923 are still in service. Supplying parts and service for every LUFKIN unit, even a 50-year-old model, is one of our top priorities.

Regional service saves expensive shipments back to the plant.

We've located warehouses in every major producing field with facilities and servicemen who can often make repairs to LUFKIN units without returning the equipment to the plant, saving our customers expensive freight charges and lengthy down times.

When it comes to parts and service, we don't kid around.

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Bakersfield, CA, 805/327-3563

Denver, CO, 303/795-9253
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Houston, TX, 713/820-9884

Executive offices & plant:

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