

ION GEOPHYSICAL CORP

Form S-3ASR

December 19, 2008

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As filed with the Securities and Exchange Commission on December 19, 2008

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549**

**Form S-3
REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933**

ION Geophysical Corporation

(Exact name of Registrant as specified in its charter)

Delaware

*(State or other jurisdiction of
incorporation or organization)*

22-2286646

*(I.R.S. Employer
Identification No.)*

2105 CityWest Blvd.

Suite 400

Houston, Texas 77042-2839

(281) 933-3339

*(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant's Principal Executive
Offices)*

David L. Roland, Esq.

Senior Vice President, General Counsel and Corporate Secretary

ION Geophysical Corporation

2105 CityWest Blvd.

Suite 400

Houston, Texas 77042-2839

(281) 933-3339

(Name, Address, Including Zip Code, and Telephone Number, Including Area Code, of Agent for Service)

Copy to:

Marc H. Folladori, Esq.

Mayer Brown LLP

700 Louisiana, Suite 3400

Houston, Texas 77002-2730

(713) 238-3000

Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this Registration Statement.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of large accelerated filer, accelerated filer and smaller reporting company in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company
 (Do not check if a smaller reporting company)

Pursuant to Rule 429 under the Securities Act, the prospectus filed as part of this Registration Statement will be used as a combined prospectus in connection with this Registration Statement and the registrant's Registration Statement on Form S-3 (File No. 333-148235) and its Registration Statement on Form S-3 (File No. 333-149458) (Prior Registration Statements). Accordingly, this Registration Statement will act as a post-effective amendment to the Prior Registration Statements. The registration fees associated with the shares registered pursuant to the Prior Registration Statements were paid at the time of the filing of the Prior Registration Statements. The registration fee paid herewith relates only to the 3,935,331 shares of Common Stock being registered pursuant to this Registration Statement.

CALCULATION OF REGISTRATION FEE

| Title of Each Class of Securities to be Registered | Amount to be Registered(1) | Proposed Maximum Offering Price Per Unit(2) | Proposed Maximum Aggregate Offering Price(2) | Amount of Registration Fee |
|--|----------------------------|---|--|----------------------------|
| Common Stock, par value \$.01 per share | 3,935,331 shares | \$ 2.80 | \$ 11,018,926 | \$433.04 |

(1) The shares of our common stock that may be offered pursuant to this Registration Statement consist of our good faith estimate of shares issuable upon conversion of our outstanding shares of Series D-2

Cumulative
Convertible
Preferred Stock,
par value \$.01
per share, and
Series D-3

Cumulative
Convertible
Preferred Stock,
par value \$.01
per share.

Shares of Series
D-2 Cumulative
Convertible

Preferred Stock
may be

converted into a
total of up to
1,123,166

shares of our
common stock,
and shares of
Series D-3

Cumulative
Convertible
Preferred Stock
may be

converted into a
total of up to
7,862,165

shares of our
common stock,
at a conversion
price of \$4.4517
per share. The

number of
shares issuable
on conversion
and the

conversion price
are subject to
anti-dilution
adjustments.

Pursuant to
Rule 416 under
the Securities
Act, this

Registration
Statement also
covers an
indeterminable

number of
shares of
common stock
issued or
issuable by
reason of stock
splits, stock
dividends and
similar
transactions
contemplated by
Rule 416 under
the Securities
Act.

- (2) Estimated
pursuant to Rule
457(c) under the
Securities Act,
solely for the
purpose of
calculating the
registration fee,
based upon the
average of the
high and low
sales prices of
our common
stock on
December 15,
2008, as
reported by the
New York
Stock
Exchange. The
registration fee
does not include
the \$2,730.21 of
total registration
fees previously
paid by the
registrant with
respect to an
aggregate of
5,050,000
shares of
common stock
covered
pursuant to the
Prior
Registration

Statements (as
defined above).

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PROSPECTUS

**8,985,331 Shares
ION Geophysical Corporation
Common Stock**

This prospectus covers the potential resale of up to 8,985,331 shares of common stock, \$0.01 par value, of ION Geophysical Corporation, of which (i) 1,123,166 shares of common stock are issuable by us pursuant to rights of conversion with respect to 5,000 shares of our outstanding Series D-2 Cumulative Convertible Preferred Stock, \$0.01 par value (the Series D-2 Preferred Stock), and (ii) 7,862,165 shares of common stock are issuable by us pursuant to rights of conversion with respect to 35,000 shares of our outstanding Series D-3 Cumulative Convertible Preferred Stock, \$0.01 par value (the Series D-3 Preferred Stock). These shares were issued under that certain Agreement dated February 15, 2005, as amended, between our company and Fletcher International, Ltd. (the Fletcher Agreement). The term Fletcher as used in this prospectus refers to Fletcher International, Ltd., the selling stockholder, and, unless the context otherwise requires, certain of its affiliated entities.

Some or all of the shares of common stock that we issue upon conversion of our Series D-2 Preferred Stock and our Series D-3 Preferred Stock may be resold by the selling stockholder from time to time in market transactions or in other transactions. Fletcher may sell the shares of common stock described in this prospectus in various ways and at different times as described in this prospectus, but it is not required to sell any of these shares. We do not know if any of these shares of common stock will ultimately be issued or whether any of them will be sold pursuant to this prospectus or otherwise. The price to the public for the shares and the proceeds to the selling stockholder at any time will depend upon the terms of such sale.

We will not receive any of the proceeds from the sale of the common stock by the selling stockholder but have agreed to bear the expenses in connection with the registration of the shares. See Plan of Distribution.

Investing in our common stock involves risks. Please read carefully the section entitled Risk Factors beginning on page 6 of this prospectus, and the sections entitled Item 1A. Risk Factors beginning on page 14 of our Annual Report on Form 10-K for the fiscal year ended December 31, 2007 (as amended), page 23 of our Quarterly Report on Form 10-Q for the quarter ended June 30, 2008 and page 33 of our Quarterly Report on Form 10-Q for the quarter ended September 30, 2008, previously filed with the Securities and Exchange Commission and incorporated by reference into this prospectus.

Our common stock is listed on the New York Stock Exchange under the symbol IO. On December 18, 2008, the last reported sale price of our common stock on the New York Stock Exchange was \$2.92 per share.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is December 19, 2008.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission (the SEC) utilizing a shelf registration process or continuous offering process. Under this shelf registration process, the selling stockholder may, from time to time, sell the securities described in this prospectus in one or more offerings. This prospectus provides you with a general description of the securities that may be offered by the selling stockholder. Each time the selling stockholder sells securities, the selling stockholder is required to provide you with this prospectus and, in certain cases, a prospectus supplement, containing specific information about the selling stockholder and the terms of the securities being offered. That prospectus supplement may include additional risk factors or other special considerations applicable to those securities. Any prospectus supplement may also add, update or change information in this prospectus. If there is any inconsistency between the information in this prospectus and any prospectus supplement, you should rely on the information in that prospectus supplement. You should read both this prospectus and any prospectus supplement together with additional information described under Incorporation of Certain Information by Reference.

The selling stockholder referred to in this prospectus may offer and sell from time to time up to 8,985,331 outstanding shares of our common stock. The shares of common stock registered for resale in this prospectus are comprised of (i) 1,123,166 shares of common stock issuable upon the conversion of 5,000 shares of our Series D-2 Preferred Stock and (ii) 7,862,165 shares of common stock issuable upon the conversion of 35,000 shares of our Series D-3 Preferred Stock. The shares of common stock registered for resale in this prospectus may also include additional shares of common stock that become issuable due to anti-dilution adjustments.

Three similar shelf registration statements on Form S-3 have previously been filed with, and declared effective by, the SEC with respect to our Series D Preferred Stock. We filed a shelf registration statement on Form S-3 (Registration No. 333-123632) with the SEC in 2005, covering resales by the selling stockholder of up to 7,500,000 shares of our common stock that are issuable upon the conversion of 30,000 shares of our Series D-1 Cumulative Convertible Preferred Stock, \$0.01 par value per share, purchased by Fletcher in February 2005 (the Series D-1 Preferred Stock, which, together with the Series D-2 Preferred Stock and the Series D-3 Preferred Stock, are referred to in this prospectus as the Series D Preferred Stock). A shelf registration statement on Form S-3 (Registration No. 333-148235) was filed with the SEC in December 2007, covering resales by the selling stockholder of up to 550,000 shares of our common stock issuable with respect to 5,000 shares of our Series D-2 Preferred Stock that were purchased by Fletcher in December 2007. A shelf registration statement on Form S-3 (Registration No. 333-149458) was filed with the SEC in February 2008 covering resales by the selling stockholder of up to 4,500,000 shares of our common stock issuable with respect to 35,000 shares of our Series D-3 Preferred Stock that were purchased by Fletcher in February 2008. The terms and conditions of the Series D-1 Preferred Stock, the Series D-2 Preferred Stock and the Series D-3 Preferred Stock are substantially the same.

Certain provisions regarding the conversion, redemption and dividend rights pertaining to our outstanding Series D Preferred Stock were adjusted in November 2008 in accordance with the terms of the Fletcher Agreement. Under the Fletcher Agreement, the shares of Series D Preferred Stock were issued having initial conversion prices equal to 122% of the average market price of our common stock at the time that the particular series of Series D Preferred Stock was issued. The terms of the Series D Preferred Stock had also provided that the shares could be redeemed for cash or in shares of common stock, calculated based upon the prevailing market price of our common stock at the time of redemption, and that dividends on the shares of Series D Preferred Stock could be payable, at our election, in cash or in shares of our common stock. On November 28, 2008, we elected to (i) reset the conversion prices for all of the Series D Preferred Stock to \$4.4517, (ii) terminate Fletcher's rights to redeem shares of Series D Preferred Stock and (iii) pay all dividends on shares of Series D Preferred Stock thereafter only in cash. As a result of our election to reset the conversion price, Fletcher may now convert its shares of Series D-2 Preferred Stock and Series D-3 Preferred Stock into a number of shares of common stock that exceeds the number of shares of common stock covered by the previous registration statements that had been filed with the SEC with respect to the Series D-2 Preferred Stock and the Series D-3 Preferred Stock.

In addition, under the Fletcher Agreement, the aggregate number of shares of common stock issued or issuable to Fletcher upon the conversion of the Series D Preferred Stock may not exceed a designated maximum number of

shares (the Maximum Number). The Fletcher Agreement provides that the Maximum Number may be increased by Fletcher with respect to the Series D Preferred Stock with a 65-day notice of increase, but in no event may the

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total number of shares of common stock issued or issuable to Fletcher with respect to the Series D Preferred Stock ever exceed 15,724,306 shares. On November 28, 2008, Fletcher delivered its notice to the Company to increase the Maximum Number to 9,669,434 shares of common stock, effective on February 1, 2009.

This prospectus does not cover the issuance of shares of common stock by us to the selling stockholder, and we will not receive any of the proceeds from any sale of shares by the selling stockholder. Except for any underwriting discounts and selling commissions that may be paid by the selling stockholder, we have agreed to pay the expenses incurred in connection with the registration of the shares of common stock covered by this prospectus.

Information about the selling stockholder may change over time. Any changed information given to us by the selling stockholder will be set forth in a prospectus supplement if and when necessary. Further, in some cases, the selling stockholder will also be required to provide a prospectus supplement containing specific information about the terms on which it or its permitted assignees are offering and selling our common stock. If a prospectus supplement is provided and the description of the offering in the prospectus supplement varies from the information in this prospectus, you should rely on the information in the prospectus supplement.

We have not authorized the selling stockholder or any dealer, salesman or other person to give you any information or to make any representations other than the information contained in the documents that we incorporate by reference into this prospectus or provided in this prospectus or any prospectus supplement. You should not rely on any information that is not incorporated by reference into, or not provided in this prospectus or in any prospectus supplement.

This prospectus (and any prospectus supplement) should not be construed as an offer to sell, or a solicitation of an offer to buy, the securities offered hereby in any jurisdiction to any person to whom it is unlawful to make an offer or solicitation in such jurisdiction.

Delivery of this prospectus or any prospectus supplement at any time does not imply that the information contained herein is correct as of any time subsequent to its respective date.

As used in this prospectus, the terms ION, company, we, our, ours and us refer to ION Geophysical Corporation and its consolidated subsidiaries, except where the context otherwise requires or as otherwise indicated.

PROSPECTUS SUMMARY

This summary highlights selected information about us and this offering by the selling stockholder contained elsewhere in this prospectus and the documents incorporated by reference into this prospectus. This summary is not complete and may not contain all of the information that is important to you. We urge you to read carefully this prospectus, any accompanying prospectus supplement, and any documents we incorporate by reference in this prospectus and any accompanying prospectus supplement before you make your investment decision.

Our Company

We are a technology-focused seismic solutions company that provides advanced seismic data acquisition equipment, seismic software, and seismic planning, processing and interpretation services to the global energy industry. Our products, technologies and services are used by oil and gas exploration and production companies and seismic contractors to generate high-resolution images of the earth's subsurface for exploration, exploitation and production operations. Our products are designed to create better analyses of the earth's subsurface, which enables oil and gas companies to make improved drilling and production decisions. Our products and services include land and marine seismic data acquisition equipment, navigation and data management software products, survey design planning services, data processing interpretation services and seismic data libraries. The seismic surveys for our data library business are substantially pre-funded by our customers and we contract with third party seismic data acquisition companies to acquire the data, all of which minimizes our risk exposure. We are able to serve oil and gas companies in all major energy producing regions of the world from strategically located offices in 22 cities on five continents.

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Seismic imaging plays a fundamental role in hydrocarbon exploration and reservoir development by delineating structures, rock types and fluid locations in the subsurface. Geoscientists interpret seismic data to identify new sources of hydrocarbons and pinpoint drilling locations for wells, which can be costly and high risk. As oil and gas reservoirs have become harder to find and more expensive to develop and produce in recent years, the demand for advanced seismic imaging solutions has grown. In addition, seismic technologies are now being applied more broadly over the entire life cycle of a hydrocarbon reservoir to optimize production, such as time-lapse seismic images referred to as 4D or four-dimensional surveys in which the fourth dimension is time.

We operate our company through four business segments. Three of our business segments – Land Imaging Systems, Marine Imaging Systems and Data Management Solutions – make up our ION Systems division, and the fourth business segment is our ION Solutions division.

Land Imaging Systems. Includes our cable-based, cableless and radio-controlled seismic data acquisition systems, digital and analog geophone sensors, vibroseis vehicles (i.e., vibrator trucks) and source controllers for detonator and vibrator energy sources.

Marine Imaging Systems. Consists of towed streamer and redeployable ocean bottom cable seismic data acquisition systems and shipboard recorders, streamer positioning and control systems and energy sources (such as air guns and air gun controllers).

Data Management Solutions. Includes our software systems and related services for navigation and data management involving towed marine streamer and seabed operations.

ION Solutions. Combines our advanced seismic data processing services for marine and land environments, our marine seismic data libraries, and our Integrated Seismic Solutions services, which manage the entire seismic process from survey planning and design to data acquisition and management through pre-processing and final subsurface imaging.

Our executive headquarters are located at 2105 CityWest Boulevard, Suite 400, Houston, Texas 77042-2839. Our telephone number is (281) 933-3339. Our home page on the Internet is www.iongeo.com. We make our website content available for information purposes only. It should not be relied upon for investment purposes, nor is it incorporated by reference into this prospectus.

For a description of our business, financial condition, results of operations and other important information regarding us, see our filings with the SEC incorporated by reference in this prospectus. For instructions on how to find copies of these and our other filings incorporated by reference in this prospectus, see **Where You Can Find More Information**.

The Offering

| | |
|---|--|
| Common stock offered by the selling stockholder | 8,985,331 shares |
| Use of proceeds | All of the proceeds from the sale of common stock covered by this prospectus will be received by the selling stockholder. We will not receive any proceeds from the sale of the shares of common stock covered by this prospectus. |
| NYSE symbol | IO |

Risk Factors

An investment in our common stock involves a high degree of risk. For a discussion of certain matters that should be considered by prospective purchasers of our common stock offered hereby, see **Risk Factors** beginning

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on page 6 of this prospectus, and the sections entitled Risk Factors contained in our Annual Report on Form 10-K for the fiscal year ended December 31, 2007 (as amended), our Quarterly Report on Form 10-Q for the quarter ended June 30, 2008 and our Quarterly Report on Form 10-Q for the quarter ended September 30, 2008, which have been previously filed with the SEC and are incorporated by reference into this prospectus.

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FORWARD-LOOKING STATEMENTS

This prospectus contains or incorporates by reference statements concerning our future results and performance and other matters that are forward-looking statements within the meaning of Section 27A of the Securities Act and Section 21E of the Securities Exchange Act of 1934, as amended (the Exchange Act). These statements involve known and unknown risks, uncertainties and other factors that may cause our or our industry's results, levels of activity, performance or achievements to be materially different from any future results, levels of activity, performance or achievements expressed or implied by such forward-looking statements. In some cases, you can identify forward-looking statements by terminology such as may, will, would, should, intend, expect, plan, believe, estimate, predict, potential or continue or the negative of such terms or other comparable terminology. Examples of other forward-looking statements contained or incorporated by reference in this prospectus include statements regarding:

our expectations for future financing and the refinancing of our existing indebtedness;

the expected effects of current and future worldwide economic conditions and demand for oil and natural gas;

future levels of spending by our customers;

expected net revenues, income from operations and net income;

expected gross margins for our products and services;

future benefits to our customers to be derived from new products and services, such as Scorpion and FireFly;

future growth rates for certain of our products and services;

future sales to our significant customers;

our ability to continue to be able to leverage our costs by growing our revenues and earnings;

expectations concerning oil and gas exploration and production companies and contractor end-users purchasing our more expensive, more technologically advanced products and services;

the degree and rate of future market acceptance of our new products and services;

expectations regarding future mix of business and future asset recoveries;

the timing of anticipated sales;

anticipated timing and success of commercialization and capabilities of products and services under development and start-up costs associated with their development;

expected improved operational efficiencies from our full-wave digital products and services;

potential future acquisitions;

future levels of capital expenditures;

future cash needs and future sources of cash, including availability under our revolving line of credit facility;

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our ability to maintain our costs at consistent percentages of our revenues in the future;

the outcome of pending or threatened disputes and other contingencies;

future demand for seismic equipment and services;

future seismic industry fundamentals;

the adequacy of our future liquidity and capital resources;

future oil and gas commodity prices;

future opportunities for new products and projected research and development expenses;

future worldwide economic conditions;

success in integrating our acquired businesses;

expectations regarding realization of deferred tax assets; and

anticipated results regarding accounting estimates we make.

These forward-looking statements reflect our best judgment about future events and trends based on the information currently available to us. Our results of operations can be affected by inaccurate assumptions we make or by risks and uncertainties known or unknown to us. Therefore, we cannot guarantee the accuracy of the forward-looking statements. Actual events and results of operations may vary materially from our current expectations and assumptions.

Information regarding some of the important factors that could cause actual results to differ, perhaps materially, from those in our forward-looking statements is contained in the section entitled "Risk Factors" below in this prospectus, and in the sections entitled "Risk Factors" contained in our Annual Report on Form 10-K for the fiscal year ended December 31, 2007 (as amended), our Quarterly Report on Form 10-Q for the quarter ended June 30, 2008 and our Quarterly Report on Form 10-Q for the quarter ended September 30, 2008, all of which are incorporated into this prospectus by reference.

We disclaim any obligation, other than as may be imposed by law, to publicly update or revise any forward-looking statement, whether as a result of new information, future events or otherwise.

RISK FACTORS

In addition to the sections entitled "Risk Factors" from our Annual Report on Form 10-K for the year ended December 31, 2007 (as amended), our Quarterly Report on Form 10-Q for the quarter ended June 30, 2008 and our Quarterly Report on Form 10-Q for the quarter ended September 30, 2008, which have been previously filed with the SEC and are incorporated by reference into this prospectus, we believe the following risk factors that relate to this offering should be considered carefully.

Our stock price has been volatile, has recently declined substantially and could continue to decline. If you make an investment in our stock, it could decline in value.

The securities markets in general and our common stock in particular have experienced significant price and volume volatility in 2008. The market price and trading volume of our common stock may continue to experience significant fluctuations due not only to general stock market conditions but also to a change in sentiment in the market regarding our operations or business prospects or those of companies in our industry. In addition to

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the other risk factors discussed in this section, the price and volume volatility of our common stock may be affected by:

operating results that vary from the expectations of securities analysts and investors;

factors influencing the levels of global oil and gas exploration and exploitation activities, such as declining demand and declining prices for crude oil and natural gas;

the operating and securities price performance of companies that investors consider comparable to us;

announcements of strategic developments, acquisitions and other material events by us or our competitors; and

changes in global financial markets and global economies and general market conditions, such as interest rates, commodity and equity prices and the value of financial assets.

To the extent that the price of our common stock remains low or declines further, our ability to raise funds through the issuance of equity or otherwise use our common stock as consideration will be reduced. This, in turn, may adversely impact our ability to reduce our financial leverage. Continued high levels of leverage or further increases may make it more difficult for us to access additional capital. These factors may limit our ability to implement our operating and growth plans.

The trading volume of our common stock may contribute to its volatility, and an active trading market may not continue.

If substantial amounts of our common stock were to be sold in the public market, the market price of our common stock could decline. Some of the other factors that can affect our stock price are:

future demand for seismic equipment and services;

the announcement of new products, services or technological innovations by us or our competitors;

the adequacy of our liquidity and capital resources;

consolidation among our significant customers;

continued variability in our revenues or earnings;

changes in quarterly revenue or earnings estimates for us made by the investment community;

speculation in the press or investment community about our strategic position, financial condition, results of operations, business or significant transactions; and

general perception of the energy or technology sectors of the economy.

The market price of our common stock may also fluctuate significantly in response to factors that are beyond our control.

If we, our optionholders or our existing stockholders holding registration rights, sell additional shares of our common stock in the future, the market price of our common stock could decline.

The market price of our common stock could decline as a result of sales of a large number of shares of common stock in the market in the future, or the perception that such sales could occur. These sales, or the possibility that these sales may occur, could make it more difficult for us to sell equity securities in the future at a time and at a price that we deem appropriate.

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At December 2, 2008, we had outstanding stock options to purchase up to 6,440,325 shares of our common stock. In addition, at that date there were 876,794 shares of restricted stock outstanding and reserved for issuance under outstanding restricted stock and restricted stock units awards.

Under the Fletcher Agreement, Fletcher has the ability to sell the shares of our common stock covered by this prospectus and shares covered under a separate effective registration statement, which may be issued to it upon conversion by Fletcher of its shares of Series D Preferred Stock.

Shares of our common stock are subject to certain demand and piggyback registration rights held by Laitram, L.L.C., one of our stockholders. In addition, in connection with our acquisition of the shares of ARAM Systems Ltd. and its affiliated companies in September 2008, we entered into a registration rights agreement with one of the selling shareholders with respect to 3,629,211 shares of our common stock that we issued in that acquisition, and we filed a registration statement with the SEC to cover resales from time to time by that selling shareholder of those common shares.

We may enter into additional registration rights agreements in the future in connection with any subsequent acquisitions or securities transactions we may undertake. Any sales of our common stock under these registration rights arrangements could be negatively perceived in the trading markets and negatively affect the price of our common stock. Sales of a substantial number of our shares of common stock in the public market under these arrangements, or the expectation of such sales, could cause the market price of our common stock to decline.

Conversion of the Series D-1 Preferred Stock, the Series D-2 Preferred Stock and the Series D-3 Preferred Stock will dilute the ownership interests of existing stockholders.

The conversion of the Series D Preferred Stock into shares of our common stock will dilute the ownership interests of existing stockholders. Effective as of February 1, 2009, the shares of Series D Preferred Stock may be converted into an aggregate of up to 9,669,434 shares of our common stock. Sales in the public market of shares of common stock issued upon conversion would likely cause downward pressure on prevailing market prices for our common stock.

Our certificate of incorporation and bylaws, Delaware law and contractual provisions under the Fletcher Agreement contain provisions that could discourage another company from acquiring us.

Provisions of Delaware law, our certificate of incorporation, bylaws and the Fletcher Agreement may discourage, delay or prevent a merger or acquisition that our stockholders may consider favorable, including transactions in which you might otherwise receive a premium for shares of our common stock. These provisions include:

authorizing the issuance of blank check preferred stock without any need for action by stockholders;

providing for a classified board of directors with staggered terms;

requiring supermajority stockholder voting to effect certain amendments to our certificate of incorporation and by-laws;

eliminating the ability of stockholders to call special meetings of stockholders;

prohibiting stockholder action by written consent;

establishing advance notice requirements for nominations for election to the board of directors or for proposing matters that can be acted on by stockholders at stockholder meetings; and

requiring an acquiring party to assume all of our obligations under the Fletcher Agreement and the terms of the Series D Preferred Stock set forth in our certificates of rights and designations for those shares, including the dividend, liquidation, conversion, voting and share registration provisions.

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We will not receive any proceeds from the sale of the shares of common stock offered and sold by the selling stockholder pursuant to this prospectus.

SELLING STOCKHOLDER

The 8,985,331 shares of our common stock covered by this prospectus consist of shares of our common stock that may be issued upon conversion of outstanding shares of Series D-2 Preferred Stock and Series D-3 Preferred Stock, which were issued to Fletcher in December 2007 and February 2008, respectively. The Series D-2 Preferred Stock may be converted into up to 1,123,166 shares of our common stock (subject to adjustment) and the Series D-3 Preferred Stock may be converted into up to 7,862,165 shares of our common stock (subject to adjustment), at a conversion price of \$4.4517 per share. Additionally, our outstanding shares of Series D-1 Preferred Stock may presently be converted into up to 6,738,999 shares of our common stock.

Under the Fletcher Agreement, the aggregate number of shares of common stock issued or issuable to Fletcher with respect to the conversion of the Series D Preferred Stock may not exceed the Maximum Number. The Fletcher Agreement provides that the Maximum Number is 7,669,434 shares. The Fletcher Agreement also provides that Fletcher may increase the Maximum Number with respect to the Series D Preferred Stock by providing the Company with a 65-day notice of increase, but in no event may the total number of shares of common stock issued or issuable to Fletcher with respect to the Series D Preferred Stock ever exceed 15,724,306 shares. On November 28, 2008, Fletcher delivered its notice to the Company to increase the Maximum Number to 9,669,434 shares of common stock, to be effective on February 1, 2009. Consequently, the aggregate number of shares of common stock issuable to Fletcher with respect to the Series D Preferred Stock may not exceed 7,669,434 as of the date of this prospectus and, effective as of February 1, 2009, may not exceed 9,669,434 shares.

As used in this prospectus, selling stockholder means Fletcher International, Ltd. and donees, pledgees, transferees or other successors-in-interest selling shares received from Fletcher International, Ltd. as a gift, pledge, distribution or other transfer not involving a sale of our common stock pursuant to this prospectus. Fletcher has not held any position or office nor has it had any other material relationship with us or any of our affiliates within the past three years, other than as a result of its ownership of shares of our equity securities.

The following table provides certain information with respect to Fletcher, including Fletcher's beneficial ownership of our common stock as of December 16, 2008, and as adjusted to give effect to the sale of the shares covered by this prospectus. The amounts set forth below are based upon information provided to us by representatives of Fletcher, and our records, as of December 16, 2008, and are accurate to the best of our knowledge. As of the date of this prospectus, Fletcher has not converted or redeemed any of the Series D Preferred Stock. No shares of common stock have been issued as dividends on the Series D Preferred Stock. It is possible that Fletcher may have acquired, sold, transferred or otherwise disposed of shares of our common stock in transactions exempt from the registration requirements of the Securities Act since the date on which it provided the information to us regarding the shares beneficially owned by it. This table assumes that Fletcher will offer for sale all of its shares of our common stock to be acquired upon conversion of the Series D Preferred Stock. We do not know whether Fletcher will convert the Series D Preferred Stock or whether it will offer for sale any or all of the common stock covered by this prospectus.

Beneficial ownership is determined in accordance with Rule 13d-3(d) promulgated by the SEC under the Exchange Act. Unless otherwise noted, each person or group identified possesses sole voting and investment power with respect to the shares, subject to community property laws where applicable.

| Name | Common Stock Deemed Beneficially Owned Prior to the Offering (1) | Common Stock Offered Hereby | Common Stock to be Owned After Offering (2) | Percentage of All Common Stock to be Owned After |
|------|---|--------------------------------------|---|---|
| | | | | Offering |
| | | | | |

| | | | | |
|---|-----------|-----------|-----|-----|
| Fletcher International, Ltd. | 9,669,434 | 8,985,331 | -0- | -0- |
| (1) The 9,669,434 shares are deemed to be beneficially owned pursuant to Fletcher's right to convert Series D Preferred Stock into such number of shares of common stock within 60 days of the date of this prospectus. | | | | |
| (2) Assumes that (i) Fletcher exercises its right to convert all of its shares of Series D Preferred Stock as of December 16, 2008, (ii) the Maximum Number is 9,669,434 shares, (iii) Fletcher receives all shares of common stock acquired upon conversion of its outstanding shares of Series D-2 Preferred Stock and Series D-3 Preferred Stock included in this table plus all shares of common stock acquired upon conversion of its shares of Series D-1 Preferred | | | | |

Stock covered
by the
prospectus filed
under ION's
shelf
registration
statement on
Form S-3
(Registration
No.
333-123632)
and (iv) Fletcher
sells all such
shares so
received.

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The securities listed above include outstanding securities held in one or more accounts managed by Fletcher Asset Management, Inc. (FAM) for Fletcher. FAM is an investment adviser to Fletcher and is registered under Section 203 of the Investment Advisors Act of 1940, as amended. Pursuant to an investment advisory agreement between FAM and Fletcher, FAM has the sole authority to vote and dispose of the securities in these accounts. By reason of the provisions of Rule 13d-3 under the Exchange Act, Fletcher and FAM may each be deemed to beneficially own the securities registered under the registration statement of which this prospectus is a part. In addition, by virtue of Alphonse Fletcher, Jr.'s position as Chairman and Chief Executive Officer of FAM, Mr. Fletcher may be deemed to have the shared power to vote or direct the vote of, and the shared power to dispose or direct the disposition of, these securities. For these reasons, Mr. Fletcher may also be deemed to be a beneficial owner of these securities.

PLAN OF DISTRIBUTION

The shares of common stock being offered by the selling stockholder have been or will be issued pursuant to an exemption from the registration provisions of the Securities Act. The shares may be sold or distributed from time to time by the selling stockholder, or by pledgees, donees, or transferees of, or other successors-in-interest to, the selling stockholder, directly to one or more purchasers (including pledgees) or through brokers, dealers or underwriters who may act solely as agents or who may acquire shares as principals and will act independently of us in making decisions with respect to the timing, manner and size of each sale.

The shares may be sold in one or more transactions at:

fixed prices,

prevailing market prices at the time of sale,

prices related to the prevailing market prices,

varying prices determined at the time of sale, or

otherwise negotiated prices.

The shares may be sold by one or more of, or a combination of, the following methods, in addition to any other method permitted under this prospectus:

a block trade in which the broker-dealer so engaged will attempt to sell the offered securities as agent but may position and resell a portion of the block as principal to facilitate the transaction,

purchases by a broker-dealer as principal and resale by the broker-dealer for its account pursuant to this prospectus,

on any national securities exchange or quotation service on which our common stock may be listed or quoted at the time of sale, including the New York Stock Exchange,

ordinary brokerage transactions and transactions in which the broker solicits purchasers,

privately negotiated transactions,

by pledge to secure debts or other obligations,

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put or call transactions,

at the market to or through market makers or into an existing market for our common stock,

in other ways not involving market makers or established trading markets, including direct sales to purchasers or sales effected through agents,

to cover hedging transactions made pursuant to this prospectus, or

underwritten offerings.

If required, this prospectus may be amended or supplemented on a continual basis to describe a specific plan of distribution. In making sales, broker-dealers engaged by the selling stockholder may arrange for other broker-dealers to participate in the resales.

In connection with the sale of shares, the selling stockholder may, subject to the terms of the Fletcher Agreement, (1) enter into transactions with brokers, dealers or others, who in turn may engage in sales, including short sales, of the shares in the course of hedging the positions they assume, (2) deliver shares to close out positions entered into with brokers, dealers or others or (3) loan shares to brokers, dealers or others that may in turn sell such shares. The brokers, dealers or others referred to in (1) above may engage in those transactions referred to in (1), (2) or (3) above through this prospectus. The selling stockholder may enter into option, swap or other transactions with broker-dealers, other financial institutions or others that require the delivery to the broker-dealers, financial institutions or others of the shares. The broker-dealer or other financial institution or others may then resell or transfer these shares through this prospectus. The selling stockholder may also loan or pledge its shares to a broker-dealer or other financial institution. The broker-dealer or financial institution may sell the shares which are loaned or pursuant to a right to rehypothecate while pledged or, upon a default, the broker-dealer or other financial institution may sell the pledged shares by use of this prospectus. The broker-dealer or other financial institution may use shares pledged by the selling stockholder or borrowed from the selling stockholder or others to settle those sales or to close out any related open borrowings of shares, and may use securities received from the selling stockholder in settlement of those derivatives to close out any related open borrowings of shares. Some or all of the shares offered in this prospectus may also be sold to or through an underwriter or underwriters. Any shares sold in that manner will be acquired by the underwriters for their own accounts and may be resold at different times in one or more transactions, including negotiated transactions, at a fixed public offering price or at varying prices determined at the time of sale. These shares may be offered to the public through underwriting syndicates represented by one or more managing underwriters or may be offered to the public directly by one or more underwriters. Any public offering price and any discounts or concessions allowed or disallowed to be paid to dealers may be changed at different times.

The selling stockholder may pay usual and customary or specifically negotiated underwriting discounts and concessions or brokerage fees or commissions in connection with their sales.

The selling stockholder and any dealers or agents that participate in the distribution of the shares may be deemed to be underwriters within the meaning of the Securities Act, and any profit on the sale of shares by them and any commissions received by any such dealers or agents might be deemed to be underwriting discounts and commissions under the Securities Act. Because the selling stockholder may be deemed to be an underwriter within the meaning of the Securities Act, the selling stockholder will be subject to the prospectus delivery requirements of the Securities Act. Neither the delivery of any prospectus, or any prospectus supplement, nor any other action taken by the selling stockholder or any purchaser relating to the purchase or sale of shares under this prospectus shall be treated as an admission that any of them is an underwriter within the meaning of the Securities Act relating to the sale of any shares.

To the extent required by the Securities Act, a prospectus supplement will be filed and disclose the specific number of shares of common stock to be sold, the name of the selling stockholder, the purchase price, the public offering price, the names of any agent, dealer or underwriter, and any applicable commissions paid or discounts or

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concessions allowed with respect to a particular offering and other facts material to the transaction. Compensation for or to a particular underwriter or broker-dealer might be in excess of customary commissions and will be in amounts to be negotiated at the time of the sale. We have agreed to bear certain expenses of registration of the common stock under federal and state securities laws and of any offering and sale hereunder but not certain other expenses, such as commissions of dealers or agents, and fees attributable to the sale of the shares. The aggregate proceeds to the selling stockholder from the sale of the shares will be the purchase price of the common stock sold less the aggregate agents commissions, if any, and other expenses of issuance and distribution not borne by us. We will not receive any of the proceeds from the sale of the shares of common stock offered by this prospectus.

We also have agreed to indemnify the selling stockholder, and the selling stockholder may agree to indemnify any broker-dealer or agent that participates in transactions involving sales of the shares, from certain damages or liabilities arising out of or based upon any untrue or alleged untrue statement of a material fact contained in, or material omission or alleged omission from, the registration statement of which this prospectus is a part, except to the extent the untrue or alleged untrue statement or omission or alleged omission was made in reliance upon written information furnished for inclusion herein by such selling stockholder.

We have agreed to file this registration statement with the SEC for the benefit of Fletcher and to use our best efforts to keep it effective until the earlier of:

the later of:

the second anniversary of the final issuance of shares of our common stock under the Fletcher Agreement; and

the date that all of the shares of our common stock issued or issuable to Fletcher can be sold by Fletcher or its affiliates immediately without compliance with the registration requirements of the Securities Act pursuant to Rule 144 of the Securities Act; or

the date that all of the shares of our common stock issued or issuable to Fletcher have been sold by Fletcher and its affiliates.

Any securities covered by this prospectus that qualify for sale pursuant to Rule 144 under the Securities Act may be sold under that rule rather than pursuant to this prospectus.

The shares may be sold through registered or licensed brokers or dealers if required under applicable state securities laws. Additionally, in some states the shares may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with. We cannot assure you that the selling stockholder will sell any or all of the common stock offered hereunder.

LEGAL MATTERS

Mayer Brown LLP, Houston, Texas, has passed on certain legal matters with respect to the shares of common stock offered hereunder.

EXPERTS

The consolidated financial statements of ION Geophysical Corporation and subsidiaries appearing in ION Geophysical Corporation's Annual Report on Form 10-K for the year ended December 31, 2007 (as amended by Form 10-K/A filed with the SEC on March 4, 2008), including the schedule appearing therein, and the effectiveness of ION Geophysical Corporation's internal control over financial reporting as of December 31, 2007, have been audited by Ernst & Young LLP, independent registered public accounting firm, as set forth in their reports thereon, included therein, and incorporated herein by reference. Such consolidated financial statements are incorporated herein by reference in reliance upon such reports given on the authority of such firm as experts in accounting and auditing.

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The audited combined balance sheets of the ARAM Group of Companies as at December 31, 2007 and 2006 and the related audited combined statements of net income, comprehensive income and retained earnings and cash flows for the years ended December 31, 2007, 2006 and 2005, included as Exhibit 99.2 of our Form 8-K/A dated November 3, 2008 and filed with the SEC, have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, independent auditors, given on the authority of such firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-3 under the Securities Act with respect to the shares. This prospectus, which is included in the registration statement, does not contain all of the information in the registration statement.

In portions of this Form S-3, we incorporate by reference information from parts of other documents filed with the SEC. The SEC allows us to disclose important information by referring to it in this manner, and you should review this information. We make our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, annual reports, and proxy statements for our stockholders' meetings, as well as any amendments to those reports, available free of charge through our website as soon as reasonably practicable after we electronically file those materials with, or furnish them to, the SEC.

You can learn more about us by reviewing our SEC filings on our website. Our SEC reports can be accessed through the investor relations page of our website located at www.iongeo.com. The SEC also maintains a website at www.sec.gov that contains reports, proxy statements, and other information regarding SEC registrants, including our company.

We furnish holders of our common stock with annual reports containing financial statements audited by our independent registered public accounting firm in accordance with generally accepted accounting principles following the end of each fiscal year. We file reports and other information with the SEC pursuant to the reporting requirements of the Exchange Act.

Our common stock is listed on the New York Stock Exchange (NYSE) and we are required to file reports, proxy statements and other information with the NYSE. You may obtain information on any document we file with the NYSE at the offices of The New York Stock Exchange, Inc. which is located at 20 Broad Street, New York, New York.

Descriptions in this prospectus of documents are intended to be summaries of the material, relevant portions of those documents, but may not be complete descriptions of those documents. For complete copies of those documents, please refer to the exhibits to the registration statement and other documents filed by us with the SEC.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The following that we have filed with the SEC are incorporated herein by reference:

Our Annual Report on Form 10-K for our fiscal year ended December 31, 2007 (as amended by Form 10-K/A filed with the SEC on March 4, 2008);

Our Quarterly Reports on Form 10-Q filed with the SEC on May 7, 2008, August 7, 2008 and November 7, 2008;

Our Current Reports on Form 8-K filed with the SEC on February 15, 2008, February 22, 2008, February 28, 2008, March 3, 2008, July 8, 2008, July 9, 2008 (as amended by Form 8-K/A filed with the SEC on July 10, 2008), August 18, 2008, August 22, 2008, September 23, 2008 (as amended by Form 8-K/A filed with the SEC on November 3, 2008), November 20, 2008, December 4, 2008 and December 5, 2008, to the extent filed and not furnished pursuant to Section 13(a) of the Exchange

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Act; and

The description of our common stock, \$0.01 par value per share, contained in our Registration Statement on Form 8-A filed with the SEC in October 1994, as amended by our Current Report on Form 8-K filed with the SEC on March 8, 2002, our Current Report on Form 8-K filed with the SEC on December 20, 2007 and our Current Report on Form 8-K filed with the SEC on February 28, 2008.

All documents we file with the SEC pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus but before the termination of the offering by this prospectus shall be deemed to be incorporated herein by reference and to be a part hereof from the date of the filing of those documents.

Any statement contained in a document incorporated by reference herein shall be deemed to be modified or superseded for all purposes to the extent that a statement contained in this prospectus, or in any other subsequently filed document which is also incorporated or deemed to be incorporated by reference, modifies or supersedes such statement. Any statement so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus.

We will provide, without charge, to each person to whom a copy of this prospectus has been delivered, upon written or oral request of such person, a copy of any or all of the documents incorporated by reference herein (other than certain exhibits to such documents not specifically incorporated by reference). Requests for such copies should be directed to:

ION Geophysical Corporation
2105 CityWest Blvd.
Suite 400
Houston, Texas 77042-2839
Tel: (281) 933-3339
Attention: Senior Vice President,
General Counsel and Corporate Secretary

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PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

An estimate (other than the SEC registration fee) of the fees and expenses of issuance and distribution of the securities offered hereby (all of which will be paid by ION) is as follows:

| | |
|------------------------------|--------------|
| SEC registration fee | \$ 433.04 |
| Legal fees and expenses | \$ 26,500.00 |
| Accounting fees and expenses | \$ 7,500.00 |
| Printing expenses | \$ 7,000 |
| | |
| Total | \$ 41,433.04 |

Item 15. Indemnification of Directors and Officers.

The General Corporation Law of the State of Delaware (the "DGCL") permits ION and its stockholders to limit directors' exposure to liability for certain breaches of the directors' fiduciary duty, either in a suit on behalf of ION or in an action by stockholders of ION. The Restated Certificate of Incorporation of ION, as amended, provides that a director of ION shall not be personally liable to ION or its stockholders for monetary damages for breach of fiduciary duty as a director, except for liability (i) for any breach of the director's duty of loyalty to ION or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of the DGCL, or (iv) for any transaction from which the director derived an improper personal benefit.

The Amended and Restated Bylaws (the "Bylaws") of ION provide that ION shall, to the full extent permitted by applicable laws (including the DGCL), indemnify its directors, officers, employees and agents with respect to expenses (including counsel fees), judgments, fines, penalties, other liabilities and amounts incurred by any such person in connection with any threatened, pending or completed action, suit or proceeding to which such person is or was a party, or is or was threatened to be made a party, by reason of the fact that such person is or was serving as a director, officer, employee or agent of ION or any of its subsidiaries, or is or was serving at the request of ION or any of its subsidiaries as a director, officer, employee, agent or trustee of another corporation, partnership, joint venture, trust, employee benefit plan or other enterprise. The Bylaws provide that the indemnification provided pursuant to the Bylaws is not exclusive of any other rights to which those seeking indemnification may be entitled under any provision of law, certificate of incorporation, bylaws, governing documents, agreement, vote of stockholders or disinterested directors or otherwise. ION has entered into indemnification agreements with certain of its officers and directors. Pursuant to such indemnification agreements, ION has agreed to indemnify its officers and directors against certain liabilities.

ION maintains a standard form of officers' and directors' liability insurance policy which provides coverage to the officers and directors of ION for certain liabilities, including certain liabilities which may arise out of this Registration Statement.

Item 16. Exhibits.

The exhibits listed in the Exhibit Index are filed as part of this Registration Statement.

| Exhibit Number | Description |
|-------------------|-------------------------------|
| *5.1 | Opinion of Mayer Brown LLP. |
| *23.1 | Consent of Ernst & Young LLP. |
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| Exhibit Number | Description |
|---------------------------|--|
| *23.2 | Consent of PricewaterhouseCoopers LLP. |
| *23.3 | Consent of Mayer Brown LLP (incorporated by reference to Exhibit 5.1). |
| 24.1 | Power of Attorney (included on the signature page hereto). |

* Filed herewith

Item 17. Undertakings.

The undersigned Registrant hereby undertakes:

(1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement: (i) to include any prospectus required by Section 10(a)(3) of the Securities Act of 1933; (ii) to reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the Calculation of Registration Fee table in the effective registration statement; and (iii) to include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement; *provided, however*, that paragraphs (i), (ii) and (iii) above do not apply if the registration statement is on Form S-3 and the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934 that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

(2) That, for the purpose of determining any liability under the Securities Act of 1933, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

(3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.

(4) That, for the purpose of determining liability under the Securities Act to any purchaser:

(i) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and

(ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5) or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii) or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the

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securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof; *provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

(5) That, for the purpose of determining liability of the registrant under the Securities Act to any purchaser in the initial distribution of the securities, in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

(i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

(ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;

(iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of an undersigned registrant; and

(iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.

Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

The undersigned registrant hereby undertakes that, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or Section 15(d) of the Securities Exchange Act of 1934 that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

Table of Contents**SIGNATURES AND POWER OF ATTORNEY**

Pursuant to the requirements of the Securities Act of 1933, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Houston, State of Texas, on December 19, 2008.

ION GEOPHYSICAL CORPORATION

By: /s/ Robert P. Peebler
 Robert P. Peebler
 Chief Executive Officer and Director

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Robert P. Peebler, R. Brian Hanson and David L. Roland, and each of them, as his true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution for him and in his name, place and stead, in any and all capacities, to sign any and all amendments (including any and all post-effective amendments) to this Registration Statement on Form S-3 and any registration statement for the same offering filed pursuant to Rule 462 under the Securities Act of 1933, as amended, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them, or their or his substitute or substitutes, may lawfully do or cause to be done by virtue thereof.

Pursuant to the requirements of the Securities Act of 1933, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated:

| Name | Title | Date |
|---------------------------|---|-------------------|
| /s/ Robert P. Peebler | Chief Executive Officer and Director | December 19, 2008 |
| Robert P. Peebler | (Principal Executive Officer) | |
| | Executive Vice President and | December 19, 2008 |
| /s/ R. Brian Hanson | Chief Financial Officer | |
| R. Brian Hanson | (Principal Financial Officer) | |
| /s/ Michael L. Morrison | Vice President and Corporate Controller | December 19, 2008 |
| Michael L. Morrison | (Principal Accounting Officer) | |
| /s/ James M. Lapeyre, Jr. | Chairman of the Board of | December 19, 2008 |
| James M. Lapeyre, Jr. | Directors and Director | |
| /s/ Bruce S. Appelbaum | Director | December 19, 2008 |
| Bruce S. Appelbaum | | |

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| | | |
|------------------------------|----------|-------------------|
| /s/ Theodore H. Elliott, Jr. | Director | December 19, 2008 |
| Theodore H. Elliott, Jr. | | |
| /s/ G. Thomas Marsh | Director | December 19, 2008 |
| G. Thomas Marsh | | |
| /s/ Franklin Myers | Director | December 19, 2008 |
| Franklin Myers | | |

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| Name | Title | Date |
|--|--------------|-------------------|
| /s/ S. James Nelson, Jr. S. James Nelson, Jr. | Director | December 19, 2008 |
| /s/ John N. Seitz John N. Seitz | Director | December 19, 2008 |
| /s/ Nick G. Vlahakis Nick G. Vlahakis | Director | December 19, 2008 |
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INDEX TO EXHIBITS

| Exhibit Number | Description |
|---------------------------|--|
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| *23.3 | Consent of Mayer Brown LLP (incorporated by reference to Exhibit 5.1). |
| 24.1 | Power of Attorney (included on the signature page hereto). |
| * Filed herewith | |